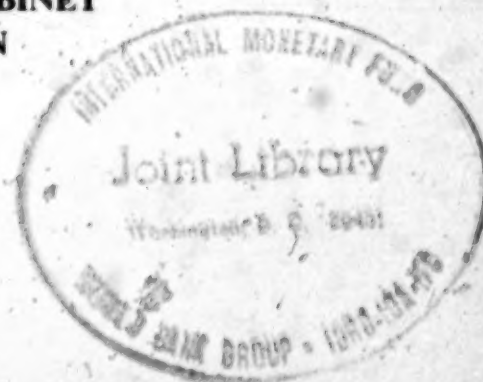


STATEMENT OF DEVELOPMENT POLICIES 1971-1980

Prepared by
OFFICE OF THE PRESIDENT AND CABINET
ECONOMIC PLANNING DIVISION



NOTE: At the time this *Statement* was prepared exchange rates for the Malawi Kwacha were based on a parity of MK 1 = US \$ 1.2. The currency re-alignments agreed by the Group of Ten in December, 1971, have therefore outdated some currency conversions quoted in the *Statement*, particularly in Chapter II. However, at the time of going to press the full effects of the recent monetary changes on world commodity prices are not fully clear; and therefore no amendments have been made to the forecasts of export prices or levels of imports denoted herein in terms of Malawi Kwacha.

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*His Excellency Dr. H. Kamuzu Banda
President of the Republic of Malawi*

Foreword

AT THE TIME when Malawi became an independent nation seven years ago, the country had one of the least developed economies in the world. Not only were we lacking most of the physical assets essential for future development, such as adequate roads, railways, power supplies, schools, hospitals and similar amenities, but we did not even have sufficient revenue to provide the basic minimum of essential services. Thus we had to rely on external assistance not only for the bulk of the finance for our development programme, which is not unusual in a developing country, but also for a considerable proportion of our recurrent budgetary revenues.

Great changes have taken place over the last seven years. New and improved roads, a new railway line, a hydro-electric scheme, a university and various other facilities in the fields of education and health have been completed. Many others are in course of construction, including the New Capital City, which will help to redress the past imbalance in the distribution of investment and employment. Perhaps our most striking achievement has been the rapid reduction in the budgetary deficit and hence in our reliance on foreign budgetary aid, which will be eliminated entirely by the end of the 1973/74 financial year.

Now that the foundations for future development have been so firmly laid, we can continue to provide increasing tangible evidence that we have never deviated from our main objective of bringing about a substantial and growing improvement in the standards of living of the ordinary people of Malawi, especially those in the rural areas. How this is being done is described in detail in the following pages.

In expressing the hope that we shall continue to enjoy assistance from other governments and international institutions in developing our nation, I must stress our recognition of the simple fact that to be successful such assistance must be vigorously supported by the strenuous efforts and undivided co-operation of the people of the country as a whole. Ultimately, only the hard work and unstinting support of the Malawi people can ensure the country's prosperity.

St. Kamukama Banda

President of the Republic of Malawi

Mr. Reckert
8-28-73

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NGWAZI DR. H. KAMUZU BANDA

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Chapter I

Development Strategy

1 Introduction

1.1 The vast majority of Malawi's population depends for its livelihood on peasant farming. Out of an economically active population of approximately 1.5 million, less than 150,000 are in paid employment in Malawi and about 250,000 are working in neighbouring countries. This leaves over one million workers—and their dependents—whose only income is derived from small scale agriculture. It is in this sector that the national development effort is being, and must continue to be, concentrated.

1.2 This choice of strategy, which gives top priority to raising agricultural productivity, is dictated not only by the present pattern of economic activities among the population but also by the nature and distribution of Malawi's economic resources. The factors of production with which Malawi is relatively well-endowed are land and labour; the factors which are in short supply are capital and high-level skills. It is therefore no more than commonsense to make the maximum use of land and labour and economise on the use of capital and skills.

1.3 A further point to note about Malawi's resource base is the absence of a highly lucrative primary industry, such as copper in Zambia. Even though such industries in less developed countries create serious problems of structural imbalance and maldistribution of income, they do at least provide the capital resources with which development in other sectors can be financed. Malawi is not entirely lacking in useful mineral resources, but even the most potentially valuable of those known at present—the Mulanje bauxite deposits—cannot be expected to provide surpluses for reinvestment during the next ten years. Hence it is only realistic to assume that Malawi will continue to require foreign capital to finance development in both the public and private sectors throughout the coming decade and this is a further reason for economising on capital and maximising labour-intensities.

2 Agriculture

2.1 A statement of more detailed objectives must therefore be concerned primarily with increasing agricultural productivity. Specific targets for individual crops are an essential ingredient of such a statement; these are outlined in Chapter III and mention will only be made here of the general strategy. This involves a two-pronged attack, providing focal growth points in the forms of high-productivity projects—irrigation and settlement schemes—while attempting simultaneously to raise the general level of productivity through extension and marketing operations. The specific projects are being sited at strategic points throughout the country; they are designed not only to achieve a high rate of direct return on the capital invested, but also to have a catalytic effect on the operations of peasant farmers in the surrounding areas.

2.2 Malawi is not aiming at mere self-sufficiency in food supplies, but also at specialised production of selected crops for export. Thus the choice of crops and the methods of marketing are of critical importance to the objective of raising farmers' incomes, while at the same time the dual role of agricultural production—for both food and cash—must be recognised. It is estimated that in 1970 subsistence production and services amounted to 40 per cent of the total GDP. As agricultural productivity rises and farmers come to concentrate on those crops which render the highest return, this proportion will decline; but for many years to come subsistence production will remain an important source of

income for most Malawians. For this reason it would be unreal to press for rapid specialisation in non-food crops (e.g. cotton and tobacco) and the crop targets rely heavily on increasing output of traditional food crops (e.g. groundnuts and maize).

2.3 The expected effects of the agricultural policies and projects described in Chapter III form the basis for the crop export projections detailed in Chapter II. These are set out with some precision, but it is fully appreciated that it is most unlikely that the projections for any individual crop will be accurately fulfilled. This is especially true of rice, which is used to cover a range of crops which cannot yet be identified but which will be grown in areas agronomically suitable for rice. In aggregate, however, there is no reason to doubt Malawi's capability of achieving the orders of magnitude indicated by the projected values of agricultural exports, especially as a conservative view has been taken of future price trends.

3 Manufacturing

3.1 Rising output in primary production will give rise to increasing opportunities for processing industries; equally, rising incomes derived from the sale of this output will open up the market for industries producing consumer goods and agricultural inputs. Malawi cannot afford to neglect any chance of raising domestic incomes, but the general development strategy requires close supervision over the growth of secondary industry. The establishment of capital-intensive industries by foreign capital would make little direct contribution to the elimination of poverty or even to aggregate domestic income: if they involved an increase in domestic prices as a result of over-protection or the closing down of existing labour-intensive Malawian enterprises (e.g. brick-makers, carpenters and grain millers), their effect could only be to depress the standard of living of the people.

3.2 As a general rule, therefore, Malawi's development strategy rules out the promotion of highly capital-intensive undertakings, unless their function is clearly essential and there is no choice of technology. A high level of protective tariffs would lead to a serious rise in the prices of basic consumer commodities, which would depress real incomes and, probably, reduce the supply of agricultural products for export. The object of tariff policy is to provide a secure domestic market for internationally competitive producers and manufacturers—not to provide shelter for the inefficient or a stimulus to uneconomic investment. The same considerations apply in the case of supply-based industries processing local raw material, in that these are only encouraged if they are able to pay export parity prices for their primary inputs. In this way industrial development in Malawi can contribute to the fundamental economic objective and avoid the effect, noticeable in some other developing countries, of concentrating income in the towns at the expense of the rural areas. These policies have been followed since Independence: the rate of growth achieved in the manufacturing sector—over 20 per cent a year from 1964 to 1970—indicates their compatibility with a high rate of industrial development.

4 Incomes Policy

4.1 The distribution of income between urban and rural areas is an important factor in Malawi's incomes and prices policy. It has been shown above that wage earners account for less than 10 per cent of the economically active population and that the main source of future increase in incomes must be rising productivity in small-scale agriculture. It would be contrary to this broad policy to create a privileged position for urban wage earners by artificially inflating their incomes, since this would be reflected in increased prices of manufactured goods and cause a reduction in real incomes of farmers. Not only would this depress the living standards of the mass of the population but would also act as a disincentive to increased effort in the agricultural sector and hence undermine the basic development strategy. Furthermore, there is no lack of empirical evidence from other African countries to the effect that rising wage rates tend to reduce employment, by encouraging the adoption of more capital-intensive methods of production. High differentials between urban and rural incomes also promote the flow of job-seekers into the towns, causing serious social and political problems.

42. In the early 1960's it was still respectable to call for increased minimum wages on humanitarian grounds with the economic justification that this would widen the market for local industry and bring about a demand-induced expansion on the Keynesian model. Experience during the past decade has shown conclusively that this approach is invalid: the result has invariably been to create a small privileged urban class whose consumption has become increasingly import-oriented, while leaving the total level of demand for domestic producers almost unchanged. Moreover, the greater part of Malawi's exports is made up of estate-grown crops and agricultural workers account for about 25 per cent of total employment. Any rise in wage costs not related to productivity would adversely affect estate agriculture and jeopardise the chances of attaining the projected level of exports. Accordingly, Malawi has adopted the policy of adjusting wages only in response to changes in productivity and, in particular, avoiding actions which increase the income gap between urban and rural workers. This policy will be maintained, but should not be confused with a rigid policy of wages freeze. There is no question that increased productivity of employees should not be rewarded with increased wages, just as in small-holder agriculture rising farmers' productivity will lead to increased farm incomes.

5 Transport

5.1 Transport, marketing and distribution services play a critical role in an economy so largely dependent on smallholder agriculture. It is essential to the success of Malawi's approach to development that there are adequate transport facilities for getting crops from farm to market; that produce markets are efficiently and honestly operated with sufficient supplies of cash at the right times; and that there are no shortages of essential supplies of merchandise—both consumer goods and farming requisites—available for sale at market centres.

5.2 The transport infrastructure which Malawi inherited at the time of Independence was clearly incapable of handling the volume of produce which Malawi is planning to produce and the need for new and improved roads, both trunk and feeder, was so widespread that almost any new development was justified. Although there is still serious pressure on the transportation system at peak marketing periods, many of the obvious improvements are already completed or in hand. A more critical appraisal of future patterns of investment in the transport infrastructure is now called for, firmly linked to expected developments in the directly productive sectors. An outline of this appraisal and of the transport policy emerging therefrom is given in Chapter IV.

5.3 Malawi now has two rail links to the coast, one running south to Beira and the other east to Nacala. Plans are under consideration for improvements to external road links to the west, to Salisbury (Rhodesia) via Tete in Mozambique and to Lusaka (Zambia) via Chipata. External air links are already provided by a number of international airlines and Air Malawi is gradually extending its own external services. Improvements in internal communications are being carried out, with the upgrading of the main north-south road linking Lilongwe to Blantyre and Zomba in the south and Mzimba and Mzuzu in the north and with the construction of the lake-shore road. In addition the feeder road network is being improved to facilitate the movement of crops to markets.

5.4 Now that the transport infrastructure is being brought up to a more satisfactory level, it is becoming possible to start considering a national transport policy which will ensure the optimum use of the various modes available—rail, road, lake and air—and the operation of least-cost transport services. This is especially important in an economy based on the production of agricultural commodities which in general have a low value-weight ratio: conversely, the relative transport costs of commodities produced in various parts of the country must be taken into account in planning the location of agricultural activities. For example, there would be little point in producing export surpluses of maize in Chitipa district, since the f.o.b. value would hardly cover internal transport and marketing costs. There is accordingly a two-way relationship between agricultural and transport policies which is reflected in the relevant chapters.

6 Tourism

6.1 Improved transport facilities are needed not only for the more efficient collection of produce and distribution of merchandise, but also to support the efforts now being made to build up the tourist industry. Malawi enjoys a variety of natural attractions, but these are of little economic benefit unless they are complemented by man-made facilities of a standard acceptable to international tourists. The need for better tourist facilities has not been overlooked in the plans for improving roads and telecommunications, while the hotel building programme will ensure the comfort of visitors when they reach their destinations.

6.2 It is important to keep the economic value of tourism in perspective. The industry is certainly capable of considerable extension over its present level, as indicated in Chapter II, and will provide a useful addition to income and employment. However, its net contribution in relation to the primary and secondary industrial sectors (agriculture and manufacturing) will remain small and hence it can only merit a relatively modest investment allocation.

7 Local Participation

7.1 At the time of Independence in 1964, the non-agricultural sectors of the economy were almost entirely controlled by foreign firms and individuals. In broad terms, manufacturing and transport were dominated by European firms, mainly British, and commerce by Asians, though here also two British firms occupied a strong position. During the past six years Government has bought out a number of private estates in the Central Region for resettlement by Malawians and, through the Malawi Development Corporation, has participated in the industrial and commercial sectors of the economy. However, for reasons which have already been made clear, further development in these sectors must continue to depend heavily on foreign capital, whether in the form of re-investment by existing enterprises or new ventures. At the same time there is still far too little of the nation's commerce and industry under indigenous control and efforts must be made to improve the position during the coming decade.

7.2 With these two conflicting requirements in mind, Malawi has embarked on a middle course. There has been no attempt at outright Government take-over of foreign-controlled firms, banks and insurance companies, nor even general stipulation regarding the permitted level of foreign control. However, principally through the medium of the Malawi Development Corporation, Government has secured a degree of local participation and influence in a number of major commercial and industrial ventures operating in Malawi; and in some fields has sponsored new ventures to operate in competition with existing foreign-controlled enterprises.

7.3 In this way Malawi has been able to move appreciably closer to full economic autonomy without cutting off the flow of foreign investment. At the same time, it has taken steps to build up the interest of Malawians in small-scale enterprises in rural areas through administrative action. Any attempt at structural change must cause a temporary dislocation in services; this is especially noticeable at the retail level and it will be some time before Malawians are able to take full advantage of the commercial opportunities opened up to them.

8 Government Revenue

8.1 The level of real personal incomes in Malawi can be gauged from the figure of K60 average GDP per person in 1970, of which only K38 was cash income. With an estimated population of 4½ million, total monetary GDP (factor cost) was only K152 million, plus a further K102 million in non-monetary income. This low level of income severely limits the tax revenues available to the Malawi Government, despite a rapid rise during the six years since Independence from less than K10 million in 1964 to K30 million in 1970/71. Although the latter figure represents 17 per cent of monetary GDP, it is only K7 per head of population and totally inadequate for providing the minimum level of services required, quite apart from the needs of the development programme.

8.2 Malawi, in common with every other less-developed country, accepts that it must continue to rely for many years to come on foreign borrowing to finance its development programme, but in the early years of Independence it also found it necessary to solicit current budgetary grants-in-aid in order to maintain a minimum level of Government administration and services. This has been keenly felt in Malawi as a derogation of its status as an independent nation and strong efforts have been made to reduce the current budgetary deficit. These have been remarkably successful, the required grant-in-aid having dropped from K11.9 million in 1965 to K4.2 million in 1970/71. It is now proposed to eliminate the current deficit entirely by 1973, a target date far closer than was thought possible until recently. How this is to be done is set out in Chapter VIII.

9 Social Services

9.1 The objective of financial independence must inevitably limit the resources available for the prosecution of other development objectives, especially in the field of social services. Education and health are goods in themselves, whose obvious intrinsic merits dispense with the need for further justification. Yet, as the experience of much richer countries shows, their demand on a nation's resources is insatiable and no country in the world has so far succeeded in meeting all the demands for education and health services. Malawi is at present only capable of providing the most rudimentary facilities, especially in the health field. The pressure on resources is such that due regard must be paid to their economic effects and policy formulations lay stress on the provision of economically useful skills and health improvements as an aid to increased productivity of labour. The implications of these policies are elaborated in Chapters VI and VII, together with plans for other improvements in social and community services.

9.2 However, while accepting the need to work within the financial constraints, the Malawi Government is determined to secure a number of socio-political objectives of major significance to the real welfare of the country's population. Education policy is designed to bring about a steady increase in the number of Malawians qualified to perform executive, technical, administrative and professional functions in both the public and private sectors, thus leading to the eventual elimination of the present reliance on expatriate personnel. An important part of the campaign against disease is a general improvement in living conditions, especially for lower paid workers in urban areas, and it will be necessary to allocate substantial resources for investment in low cost housing. This will make an important contribution to the prevention of disease and will help to make up for the low level of expenditure on direct preventative health measures which is all the financial constraints will allow.

9.3 It should be stressed that there is no lack of appreciation that the best strategy to adopt in the war against disease is to take preventive action, but that it is felt essential—for both humanitarian and political reasons—to maintain treatment facilities on at least their present level. The Malawi Government's revenue position does not permit expenditure on both the minimum acceptable level of treatment as well as on major preventive schemes: it is for this reason only that preventive health must for the time being be given a low order of priority.

10 New Capital

10.1 An important aspect of Malawi's economic objectives is to ensure that the fruits of development are spread as evenly as possible throughout all sections of the population and all parts of the country. In the past, such development as took place during the colonial era was mainly concentrated in the Southern Region, since the only rail link with the outside world ran south to Beira. This tendency was confirmed by siting Government headquarters in Zomba, also in the Southern Region.

10.2 The effect of this historical concentration in the south was a much lower level of development in the Central and, in particular, the Northern Regions and a southward migration of population. By the time of the 1966 census, 51 per cent of the population

were living in the Southern Region, where population densities were $3\frac{1}{2}$ times as high as in the Northern Region.

10.3 A number of measures have been taken to bring about a more even spread of development, of which the most imaginative is the creation of a new capital city at Lilongwe. This will involve an annual expenditure of approximately K5 million a year for ten years and will create a new economic growth point at Lilongwe, which is not only in the centre of the country but also surrounded by areas of high agricultural potential.

10.4 The move of Government headquarters to Lilongwe will commence in January 1972 and is due to be completed by 1976. This in itself will cause a significant shift in the geographical distribution of income which will be reinforced by the commercial and industrial development which it will attract. Already 20 applications for sites in the new Lilongwe industrial area have been received, some of which will involve substantial investment and create considerable opportunities for additional employment.

10.5 By the end of the decade Lilongwe will be a thriving city of some 180,000 people and, in conjunction with other development schemes in the Central and Northern Regions, should have brought about a more even spread of development throughout the country.

11 Position in 1980

11.1 The effect of these policies is calculated to raise Malawi's GDP at factor cost from K254 million in 1970 to about K359 million in 1975 and K541 million in 1980. During this period population is expected to continue increasing at the rate of $2\frac{1}{4}$ per cent a year to approximately 5.0 million in 1975 and 5.7 million in 1980, compared with 4.4 million in 1970. GDP per head will therefore rise from K57 a year to K78 in 1975 and K95 in 1980. This is a substantially faster growth rate than was achieved in the first quinquennium after Independence (1964-1969) but, as the following pages show, it is not beyond the capabilities of a determined people.

11.2 An important part of the real income received by the people of Malawi does not enter into the monetary GDP but takes the form of direct consumption of their own product. A major assumption underlying these policies is that the national average level of subsistence production per head will remain constant, but that the acreage under subsistence crops will remain static, in order to release sufficient land to produce the projected export outputs. A corollary of this assumption is that productivity in subsistence agriculture will rise *pari passu* with population increase. In this way it can be assured that increases in monetary income represent a real gain in material welfare and are not just a substitute for declining income in kind. On the production side, it ensures that the traditional agricultural sector, which contains the majority of small-scale farmers, receives due attention and is not overlooked in favour of the big schemes.

11.3 Even on a generous view of the value of subsistence output, the average Malawian in 1980 will not be a rich man. With total GDP per head by that time of the order of K100 a year at 1970 prices, the average family will be enjoying a gross income in cash and kind of not much more than K500 a year. At this level of income there will be no room for extravagance in either public or private consumption. The standard of living will still be low, but will be markedly higher than it is at present.

11.4 No set of plans or projections prepared today can be valid for the next ten years. The projections of production and investment described in the following chapters are intended only to serve as a quantitative illustration of Malawi's main growth possibilities and investment priorities, as evaluated in 1971. Events are bound to change this evaluation in the future. Some possibilities that seem promising now will probably not fully materialise; but others not now foreseen will spring up. More important, it is a major policy objective of the Government to develop the sort of economy and the sort of attitudes which will permit the country to adapt efficiently to these changing opportunities, while adhering to its basic long run goal of sound economic and social development. This the Government is doing and intends to do in the future, by maintaining ample incentives for private initiative, by strengthening its public sector institutions, by encouraging domestic savings and by following prudent external borrowing and exchange reserve policies.

Chapter II

Prospects for Exports

1 Importance of exports in the Malawi economy

1.1 As in most developing countries, exports play a crucial role in the economy. In Malawi's case this importance is heightened by the interrelated factors of a concentration of economic activity in agriculture and a low level of *per capita* incomes which limits the effective size of the domestic market. As already mentioned in Chapter I, Malawi is generously endowed with the resources of fertile land, water and an industrious people, through short of capital and managerial skills: this implies a comparative advantage in small-scale agricultural production (which does in fact involve some 85 per cent of the working population). The main way by which the market for the output, and hence incomes, of small farmers can be expanded is through exporting to other countries.

1.2 The value of exports produced by small-scale farming is roughly matched by exports from the estate agriculture sector, which has always looked primarily to export markets for its production. Originally based upon coffee and tobacco, estates and plantations now concentrate upon tea, tobacco (Burley and flue-cured) and sugar. Where external market conditions are favourable there is clearly a potential for increasing export earnings and domestic incomes through more productive use of land under an estate-type organization for crops (such as flue-cured tobacco) which require a high level of working capital and management expertise.

1.3 While the expansion of manufacturing industries is generally constrained by the rate of growth of the domestic market, nevertheless increasing opportunities present themselves for exports of manufactured products, both of import-substitutes produced mainly for the home market (such as footwear) and of processed domestic produce (such as canned fruit). For both types of goods the identification of profitable export markets to supplement the domestic market can lower the unit costs of production and allow the establishment of industries which would otherwise be uneconomic, thus raising the growth potential for incomes in Malawi.

1.4 It is true, of course, that in a sense goods exported represent real resources lost to the economy and transferred elsewhere. The benefit they bring lies in the goods and services which they make possible to buy from abroad, in the expectation that the economies of specialisation will lead to higher levels of real income than a sweeping policy of self-sufficiency. With a much lower level of export proceeds undoubtedly Malawi could still achieve balance on her foreign payments (without recourse to the reserves), but at a cost of a drastically reduced rate of investment and economic growth.

1.5 The importance, therefore, that Malawi attaches to developing her exports is based not on a critical need for foreign exchange, but because it recognises that a dynamic performance in increasing its share in world markets offers the best means of raising the incomes of its people at home. For this reason, the projections of future export earnings contained herein are central to all the other economic forecasts for the present decade. Given, too, the importance of external market factors to the growth of Malawi's domestic economy, a further diversification of the export base will also be desirable to forestall any adverse movements in world demand for the main export crops.

2 Recent export performance

2.1 Since 1964 the value of Malawi's domestic merchandise exports has grown at an average rate of 10 per cent a year. With a faster growth in re-exports and exports of

invisibles (non-factor services), total export earnings have increased at an average rate of 12½ per cent a year, and have maintained a share of about 40 per cent of monetary GDP, as shown below in Table II.1. If stock changes are taken into account a very close relationship between growth of domestic exports and growth of monetary GDP becomes apparent.

TABLE II.1: MALAWI EXPORTS 1964-70 (K mm.)

	1964	1965	1966	1967	1968	1969	1970
Smallholder crops	12.3	15.5	14.8	19.0	17.4	18.1	18.0
Estate crops	9.8	10.6	12.0	13.0	14.5	16.2	19.5
Main manufactures	0.3	0.5	0.4	0.6	0.9	0.9	1.2
Other misc. commodities	0.5	0.5	0.5	0.6	0.8	1.5	1.8
Total domestic exports	23.0	27.1	27.7	33.1	33.6	36.6	40.3
Adjustments ¹	0.3	0.3	0.5	0.5	0.8	0.5	0.8
Re-exports ²	1.1	1.0	6.4	6.8	5.7	6.2	6.3
Invisibles	3.2	4.0	6.0	7.0	8.0	7.5	8.1
Total exports	27.5	32.4	40.6	47.4	48.0	50.8	55.6
Monetary GDP ³	74.2	89.8	102.8	111.5	120.4	137.5	152.2
Exports as % of GDP	37	36	40	43	40	37	37

¹to "payments" basis; ²adjusted to "payments" basis; ³at factor cost.

NOTE: individual items may not exactly sum to totals due to rounding.

Source: National Statistical Office and Economic Planning Division

2.2 The growth-rate achieved in domestic merchandise exports of about 10 per cent a year has been the result of both increased volumes exported and improved prices. Table II.2 shows unit value and quantum indices for total domestic exports for each year since 1964. These indices show that a weighted average of export prices has increased by 23 per cent over the six years (or by about 3½ per cent a year); while a weighted average of export volumes has gone up by 29 per cent (or by about 4½ per cent a year). Thus a little over half the growth in domestic export earnings may be attributed to greater quantities, and nearly one-half to the effect of higher prices in world markets.

TABLE II.2: DOMESTIC EXPORT INDICES—UNIT VALUE AND QUANTUM

(All items)	Unit Value Index	Quantum Index
(1967=100)	(Paasche)	(Laspeyre)
1964	103.9	67.9
1965	109.2	74.7
1966	105.7	78.9
1967	100.0	100.0
1968	111.0	91.4
1969	118.8	91.3
1970	127.3	87.6

Source: National Statistical Office

2.3 The index for import prices (measured since 1967) has risen much less rapidly than the export price index in spite of devaluation in November 1967, to only 108.3 in 1970. Thus there has been a very considerable improvement over the last four years in Malawi's terms of trade.* But to the extent that world prices for primary food products may have

* A given quantity of Malawi exports would have bought 17.5 per cent more imports in 1970 than in 1967.

reached a peak in 1970/71 (as seems likely), it will be more difficult to maintain over the next ten years the rapid rate of growth in export earnings achieved in 1964-70. This makes it all the more important for Malawi to concentrate efforts on producing those export crops for which it can foresee an elastic future market.

2.4 Of the increase in total export earnings between 1964 and 1970 of K28 million (see Table II.1), over K10 million consists of increases in re-exports and invisibles, which together have grown from K4.3 million in 1964 to K14.4 million in 1970. On their own, however, the figures for these items are misleading, since in both cases they conceal corresponding increases on the import side. It has been calculated that about 80 per cent of the value of re-exports is reflected in the value of imports, only the remainder being value-added in transit through Malawi. The tremendous rise since 1965 in the value of re-exports which reached a peak of K7 million (net) in 1967, is mainly due to Zambian tobacco now sent to Malawi for packing after auction rather than to Rhodesia. Petroleum products in transit to Zambia also contributed to the increase. In the case of invisibles (exports of non-factor services), which include such items as local expenditure by foreign embassies and technical assistance personnel, management and agency fees paid from abroad, and earnings from transport and tourism, credits have risen from K3.2 million in 1964 to an estimated K8.1 million in 1970, mainly due to increases in the first two items mentioned. The debit side, on the other hand, representing payments abroad for such services (especially international freight and insurance) has risen from K10 million to K23.7 million, so that the net effect upon the balance of payments has been that the gap on invisibles has widened from less than K7 million in 1964 to around K16 million in 1969 and 1970.

2.5 The real growth has, of course, been in domestic exports, whose value has risen by over K17 million (or 75 per cent) in six years. Smallholder crops have contributed K6 million of this increase, registering significant gains in the main cash crops—dark-fired tobacco, groundnuts and cotton. Exports of maize also exceeded K3 million in 1967 and 1968 following exceptionally good harvests. In the less important crops, considerable increases are also recorded for cassava, rice and sunflower seed. Export prices for all the main smallholder crops, with the exception of cotton, have improved over the period, particularly for confectionery groundnuts. In the case of cotton there was a decline until 1968, since when prices have recovered to their 1964 level.

2.6 Thanks both to improved prices and to increased production, the contribution of estate agriculture to export growth has been still more dynamic, making up K10 million of the K17 million total addition to domestic exports between 1964 and 1970. In the case of tea the industry has maintained a steady increase in production and has managed to offset the effects of generally declining world prices through considerable improvements in quality. The flue-cured and Burley tobacco industry has responded to unprecedentedly high prices with a massive increase in investment and production. The export value of estate-grown tobacco has in fact risen from K2.7 million in 1964 to K8.2 million in 1970. Exports of tung oil, however, with the withdrawal of two of the main producers, have remained more or less static around their 1964 level. Market conditions have eliminated exports of sisal during this period.

2.7 Manufacturing industries have also contributed to the growth in exports since 1964, even though the main emphasis in industrial development up to now has been on import-substituting rather than export-oriented industries. The classification of manufactured goods is inevitably somewhat arbitrary, since many agricultural products require a considerable amount of industrial processing before they can be exported. However, exports of main manufactures (that is, products most of whose value-added is derived from manufacturing) have increased from K0.3 million in 1964 to K1.2 million in 1970. Within this period, however, the rate of growth has tended to be uneven, largely because quantities available for export of manufactured products vary according to changes in demand within the domestic market. Thus exports of cement (to the eastern province of Zambia) averaged K120,000 a year in 1966-68, but have fallen right away in the last

two years as domestic demand for cement has risen to meet the level of productive capacity. Exports of cattle-cake, a by-product of oil-seed crushing, have provided a profitable item, with a fairly steady increase from an average of K150,000 a year in 1964-68 to K330,000 in 1968-70. But the most rapid growth of all has been in exports of clothing and footwear, where active marketing of good products at competitive prices has found markets in neighbouring countries worth over K500,000 in 1970, whereas in 1964 there were no exports of these products at all. The other main item is wooden boxes, which are mainly sent to neighbouring countries for the packing of tobacco; growth has been prevented by declining tobacco sales in both Rhodesia and Zambia.

2.8 The final category, consisting of other miscellaneous commodities, includes exports of fish, hides and skins and, more recently, precious stones, as well as migrants' effects. Fish exports stagnated around K25,000 from 1964 to 1967, then began to increase rapidly to more than K250,000 in 1970, aided both by the recovery of Lake Chilwa and by the discovery of new trawl stocks in Lake Malawi, as well as by an increase in exports of aquarium fish. Hides and skins show a steady growth, in line with the expanding national herds, from about K100,000 in 1964 to K225,000 in 1970.

2.9 It is clear, then, that in spite of a rapid percentage rate of growth in export of manufactures and other miscellaneous commodities, exports from the agricultural sector still predominate overwhelmingly, having been responsible for 90 per cent of the total K17 million increase in domestic exports between 1964 and 1970. Some K10 million of this increase in agricultural exports (including fish and hides) was produced by estates and about K6 million by smallholders. Although non-agricultural exports are gradually increasing in importance, exports of agricultural produce still account for over 75 per cent of domestic exports; it is on the expected growth in output of this produce that Malawi's future export earnings, and hence GDP, will very largely depend.

3 Basis of Export Projections

3.1 The basic objective underlying the export projections which follow has been to give figures for the likely totals of export earnings in 1975 and 1980, from which projections of the other main economic variables—such as GDP, savings, investment and imports—can in turn be derived. The export projections have then themselves been checked back for consistency with these other macro-economic variables.

3.2 Hence the aim has been to keep projected values for each export item as realistic as possible, rather than to produce a set of inflated and inherently unattainable targets. They must, however, make the necessary assumption that current plans and policies will be successful in achieving their desired results. Future difficulties in implementation which cannot now be foreseen may render the volume projections a little optimistic in this respect. However, it is considered that any optimism in the volume projections will be fully offset by a certain degree of conservatism in projecting future export prices. Overall the intention is that any misjudgments in the individual items will be balanced out in the aggregates.

3.3 For exports of agricultural produce (projected still to account for nearly 80 per cent of domestic merchandise exports in 1980) projections of volumes of each crop available for export have been made, taking account of current and future projects to increase their production, known trends in domestic consumption and availability of land. These volume forecasts have been compounded with projections of future prices (worked back to a free-on-rail Malawi border basis) to give projected values. Generally speaking, the export prices projected for agricultural products on the world market follow a downward trend for various reasons, and are on a "current prices" basis (i.e. they are prices expected to be actually paid); however, in some cases they could be affected by any marked change in rates of inflation in the developed economies to which Malawi exports.

3.4 Export prospects for manufactures have been examined on the basis of a distinction drawn between domestic demand- and domestic supply-based industries, since the factors affecting growth in each category are obviously very different. A forecast for each industry likely to be a significant exporter has been made, taking into account the views of all

concerned, including the firms themselves in most cases. While the same consideration of realism rather than optimism applies as in the case of agricultural exports, the greater difficulty of forecasting markets and trade barriers for manufactured products means that inevitably some of the individual industry forecasts will in the event prove wrong. For this reason, and to avoid identifying the future plans of individual firms, only a breakdown of manufactured exports by demand- and supply-based industries is shown.

3.5 For invisibles, such as tourism, an analysis has been made of the main credit items in the balance of payments and estimates made of likely rates of growth for each item, at current prices. The induced effect on imports is taken into account in the projections in Chapters V and IX.

3.6 The value of re-exports has been assumed to remain constant during the period at a net K7.4 million a year, simply because at this time there is no indication that Malawi can expect any major increase in its re-export trade with Zambia or Mozambique. In any case a rise in the gross value of re-exports only benefits the balance of payments by about one-fifth, being the proportion of value-added while in transit through Malawi.

4 Exports of Crops

4.1 Between 1964 and 1970 the value of exports of agricultural crops grew at an average rate of 9.1 per cent a year, due in roughly equal measure to greater volumes and to higher prices. During this period the export value of crops grown on estates increased on average at a rate of 12.2 per cent a year (mainly as a result of the rapid growth in flue-cured and Burley tobacco), or about twice the average rate of increase in exports of smallholder-grown crops, which was 6.4 per cent a year. The slower growth-rate for smallholder crops reflects in part their greater susceptibility to vagaries of the weather, with 1970 a particularly difficult season for maize and groundnuts (See *Economic Report 1971*).

4.2 Both sectors, however, benefitted considerably from improvements in export prices and in quality during the 1964-70 period. Had export prices remained at their respective 1964 levels, and discounting the effect of quality improvements, then in simple volume terms exports of smallholder crops increased by only 2 per cent a year on average and estate crops by only $8\frac{1}{2}$ per cent a year (See Table II.14 below).

4.3 However, the effect of all the projects and extension effort in smallholder agriculture is expected to accelerate the real rate of growth in its production and export surpluses, such that it will quickly overtake the estate sector and reverse the trend of the last six years. In volume terms (at constant 1970 prices) the projections imply a growth over the decade to 1980 of some $13\frac{1}{2}$ per cent a year in smallholder crop exports, as against $8\frac{1}{2}$ per cent a year in exports of estate crops. Allowing for projected price changes, this means an average growth in export values of $11\frac{1}{2}$ per cent a year for smallholder crops and 6 per cent a year for the estate crops. Implicit, then, in these projections is the assumption that world prices for most of Malawi's export crops have reached a peak around 1970/71 and that on balance the trend over the next ten years can be expected to be in a downward direction. Thus any suggestion that the volume forecasts may be too ambitious must be weighed against these fairly conservative forecasts of future prices. However, there is no reason why the projected volumes should not be attained in full, given the present rather low average yields being obtained and the massive investments of human and material resources going into improving them, as described in Chapter III.

5 Estate Crops

5.1 Tea

5.1.1 Although tea is now successfully grown by smallholders, it is still largely produced on private estates and for that reason has been included in the present section. Production is almost entirely for export, since domestic consumption currently amounts to less than 2 per cent of total production.

5.1.2 Tea exports have grown steadily from less than 27 million lb. in 1964 to just over 39 million lb. in 1970, with an increase in value from K6.7 million to K10.9 million maintaining the place of tea as second only to tobacco in value as an export. In the face of generally declining world prices, Malawi has been successful in improving quality to maintain average unit prices for its tea, which is used traditionally as a filler for blending with other higher quality "bright" teas. However, it is hoped that the application of tea research results will change the present status of the Malawi product as primarily a "plain" tea.

5.1.3 At present the planned production of world tea exporters is considerably in excess of projected consumption in importing countries, with the resultant prospect of falling prices. The short-term measures agreed during 1969 at consultations of tea exporters initiated by the FAO (in which Malawi actively participated) certainly helped to stabilise the market in 1970. The difficulty in projecting the value of tea exports derives from the uncertainty regarding the establishment of a long-term international agreement to limit growth in exports. The prospects for achieving such an agreement appear reasonably good but cannot yet be regarded as certain.

5.1.4 The projected FOR price for Malawi tea thus has to weigh the chances of a long-term Agreement being reached. On the basis of the model used by the FAO to forecast tea prices it has been calculated that with no agreement FOR prices for Malawi tea would fall to around the level of costs per pound ex-factory. With an agreement in force it is thought that prices could be maintained at their average 1968 and 1970 levels of 28 t/lb. (FOR). Taking an average of the two, and allowing a small margin for further quality improvement, suggests an average price of 24 t/lb., and this has been used. If an agreement can be concluded that effectively restrains the dominant producers to make room for the current aspirations of new producers, then such a price ought to be an understatement of what Malawi can obtain. On the other hand, it must be recognised that if there is no agreement and prices fall, it is the plain tea producers who will be the first to suffer. A price of 24 t/lb. FOR is equivalent to a price of about 32 new pence per kilo on the London auctions and Malawi prices have been below that level in a number of recent years.

5.1.5 Table II.3 shows projected volumes of tea production and exports. The forecast for smallholder tea allows for production from Phase II of the scheme, although being a long-term crop it is some years before the new plantings come fully into bearing. (The figures for smallholder production shown allow for actual yields about 35 per cent above those planned in the project.) Domestic sales of all tea were estimated at some 600,000 lb. in 1970; allowing for the high income-elasticity of this beverage in Malawi, these are projected to increase to some 2 million lb. by 1980.

TABLE II.3: TEA PRODUCTION AND EXPORTS 1970-1980

	1970	1975	1980
Estate production . . .	41.2	46.6	52.9
Smallholder production . . .	0.1	1.1	4.4
Total production . . .	41.3	47.7	57.3
Domestic sales . . .	0.6	1.2	2.0
for Export . . .	39.0	46.5	55.3
Value—K mn. . .	10.92	11.16	13.27

It is considered that the projected average annual rate of growth in quantity exported of 3.6 per cent can reasonably be expected to be accommodated within an international agreement.

5.2 Flue-cured Tobacco

5.2.1 Acreage planted to flue-cured tobacco more than trebled between 1964 and 1970. Quantity sold at auction increased from 2.7 million lb. in 1964 to 6.1 million in 1969. With the opening up of some 50 new estates in the Central Region there was a further very large

expansion in 1970 to a crop of 10.3 million lb. Actual export earnings have risen from K0.9 million in 1964 to K4.7 million in 1970. From the 1964 average of 22.8 t/lb. auction prices for flue-cured virtually doubled to 43.2 t/lb. in 1967, but in 1970 fell back to 38.0 t/lb.

5.2.2 It has been agreed that in view of the current rapid development of new estates one can safely forecast production of 17 million lb. by 1975 and 20 million lb. by 1980. Suitable land will be available to meet this increase: the new estates have only just started to produce a fraction of their full potential of some 6 million lb.; an increase of at least 2 million lb. by 1980 is likely from the Kasungu Tobacco Growers Scheme, which produced 1.3 million lb. 1970; there is still some new land which is thought to be suitable; and finally, existing estates can be expected to achieve further improvements in their average yields.

5.2.3 A good deal of the value of flue-cured tobacco is added after auction during grading and processing operations before export, which account for a difference of some 20t per lb. between auction prices and the final export value. The present price projections, tending to be conservative, have allowed for the restoration of normal trading conditions with Southern Rhodesia; which eventuality it is thought would lead to a long-term average auction price for Malawi flue-cured of around 36 d/lb., or 30 t/lb. Thus an average export price (FOR) has been assumed of 50 t/lb. of tobacco sold—this takes account of the small percentage weight loss that occurs after auction.

5.2.4 The value of exports of flue-cured tobacco are thus expected to rise to K8.5 million in 1975 and K10.0 million in 1980. The continuance of the present embargo on trade with Rhodesia, or a more rapid development of new estates than is currently envisaged, would each tend to increase these values still further.

5.3 Burley Tobacco

5.3.1 Auction sales of Burley tobacco amounted to 4.7 million lb. in 1964, and rose fairly steadily to 7.6 million lb. in 1969, the main consideration being to limit production to the rather gradual growth in trade demand for this type of tobacco. However, a number of new growers entered the field in 1970, when there was a tremendous expansion in production to 12.5 million lb. Average yields per acre doubled between 1964 and 1970. The value of Burley exports almost doubled from K1.8 million in 1964 to K3.5 million in 1970.

5.3.2 Malawi Burley is regarded as one of the closest substitutes for the American-grown type and the market has been steadily improving, in particular for the lighter grades. At the same time, the market remains firm for the more traditional red Burley. Taking account of the prime necessity to produce a well balanced crop and, if possible, increase the proportion of coloury and light tan grades, it is forecast that production will rise to 17 million lb. in 1975 and 20 million lb. in 1980.

5.3.3 It is not clear to what extent auction prices would fall if Rhodesia returned to the market, since the pre-UDI Rhodesian crop amounted to less than 10 million lb; however, the improvement in the market for this type of tobacco could be expected to encourage a rapid increase in production on their lighter soils, with a consequent easing in price for Malawi Burley. However this threat is probably not as serious as the danger of rapidly increasing production in certain European countries.

5.3.4 However, the continuation of a reasonably firm market is assumed, and an average long-term auction price of 25 t/lb. has been projected, indicating an average export value of around 40 t/lb.

5.3.5 On these assumptions, Burley tobacco exports are projected to rise to K6.8 million in 1980. The volume of this crop may in fact rise slightly faster than anticipated; but on other hand the assumed 40 t/lb. export value might not be realised if a large Rhodesian crop were to make an impact on the market.

5.4 Tung Oil

5.4.1 Malawi tung oil has been grown on only a small number of estates. It is exported to a number of countries, chiefly South Africa, as an important raw material for specialised

paints and varnishes. Over the last three years, since the closing down of Vipya Tung Estates in the north, exports have averaged just over 1,000 long tons of oil a year. Prices have been very variable in past years, but there has recently been an improvement and a measure of price-security is given by the arrangements for tung oil under the South African trade agreement. It is expected that with an average long-term price (FOR) of K300 a long ton production and exports will be maintained at the present level of 1,000 tons a year, giving an annual value of K0.30 million.

5.5 Sugar

5.5.1 Malawi has a vast potential for growing cane-sugar under irrigation for export. This is demonstrated by the fact that the country has attained self-sufficiency in sugar only four years from the establishment of its first, and only, sugar estate in the Lower Shire Valley.

5.5.2 Production reached 36,100 short tons of sugar in 1970, leaving a margin of 4,000 tons available for export to neighbouring countries. It is estimated that domestic consumption will rise to 59,000 tons by 1975 and 81,500 tons by 1980. On present plans for expansion at Nchalo and Kasinthula, this will leave surpluses of 22,500 tons and 48,000 tons respectively to be exported.

5.5.3 The future course of free market prices for sugar contains a number of uncertainties, but assuming that the International Sugar Agreement can be successfully renegotiated in 1973 it is expected that the median price for sugar over the next few years will lie between 4.0 and 4.5 US cents per lb. FOB Caribbean port or between £41.50 and £46.50 per long ton CIF London. For Malawi sugar sold on the free market this would imply a FOR price of about K56 a short ton.

5.5.4 However, Malawi has successfully applied for a 15,000 tons quota for a large part of its sugar export surplus under the United States Sugar Agreement. It is not known precisely what price will be obtainable, but for the purposes of this exercise K90 per short ton (FOR) is assumed.

5.5.5 Taking an average of these two prices it is estimated that an overall price (FOR) per ton exported of K80 could realistically be attainable. This would yield total export values for sugar of K1.80 million in 1975 and K3.84 million in 1980. The final outcome could vary from these forecasts depending on the course of free market prices, the size and price obtained for a US sugar quota, the rate of development of irrigation in the Lower Shire Valley and the rate of increase in domestic consumption.

5.6 Summary of Estate Crop Export

The projections above indicate the following increase in the value of exports of estate-crops, consisting of tea (including smallholder production), tobacco (including smallholder—grown flue-cured and Burley), tung oil and sugar:

	1970	1975	1980
K mn.	19.51	28.56	35.41

This represents an average growth rate over the decade of 6.1 per cent a year in monetary value. Since average unit values are expected to decline, the volumetric rate of growth would be over 8 per cent a year (See Table II.14).

6 Smallholder Crops

6.1 Tobacco

6.1.1 Four types of tobacco are grown by small-scale African farmers in Malawi—Northern Division Dark-Fired (grown mostly in the Central Region and far the largest in volume), Southern Division Fire-Cured (generally a lighter type of leaf), Sun-Air Cured (grown in both the Northern and Central Divisions) and Oriental (sometimes referred to as Turkish tobacco). Apart from the normal hazards of weather, disease, etc., production

appears to be highly price-responsive and has fluctuated widely in recent years between 41 million lb. in 1965 and under 13 million lb. in 1969, the lowest for 17 years.

6.1.2 To some extent the marked swings in production have been evened out in the quantities actually sold at auction. Nevertheless, average prices paid at auction have usually shown a clear reaction to any excess of tobacco offered for sale over the requirements of the trade.

TABLE II.4: CUSTOMARY LAND TOBACCO 1963-70

	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
FMB purchase* (mn. lb.)	33.7	18.5	40.6	32.1	35.0	19.4	12.8	26.2
Weight sold at auction (mn. lb.)	28.2	24.4	40.5	31.7	24.5	19.1	15.0	26.1
Average auction price: (t/lb.)								
Fire-cured	15.03	16.98	16.29	16.14	11.73	17.28	25.98	26.52
Sun/Air-cured	18.85	20.67	13.95	9.88	11.47	20.49	27.67	26.92
Average export price (FOR) (t/lb.)	n/a	26.62	25.46	23.18	21.88	24.46	33.79	39.38
Total export value (K mn.)	n/a	5.74	7.84	6.36	5.06	5.92	6.28	8.27

* including 0.1-0.2 mn. lb. of Oriental tobacco, which is not sold over the auction floors.

6.1.3 Although production has fluctuated widely from year to year, the main constraint on export growth has generally been on the demand side; and since the overproduction of 1967, the supply has been regulated by a system of growers' quotas operated by the Agricultural Development and Marketing Corporation (ADMARC)—formerly the Farmers Marketing Board (FMB). In addition, since 1969 growers have received a second payment for their tobacco sold under quota, related to the prices realised on the auction floors. The effect of these second payments in 1969 and 1970 can be seen in the large increases in production in 1970 and 1971. Apart from tobacco purchased by ADMARC and sold on the auction floors for export, there is also a considerable local market for fire-cured tobacco (amounting to some 2 million lb. in the Southern Region alone) and the setting of production quotas makes due allowance for this market, supported by recently revised legislation regarding trade in tobacco.

6.1.4 While it is never easy to forecast buyers' exact requirements in advance, present indications are fairly clear that there will be an expanding market for Malawi fire-cured and sun/air cured tobacco. Reports suggest that US production of Tennessee and Kentucky dark-fired Virginia is suffering from rising costs in this labour-intensive smallholder industry and that Malawi fire-cured is regarded as one of the closest substitutes. Provided a controlled steady increase in production can be achieved, at the right price, there are good hopes for replacing some of the former American export markets (as has already happened in West Africa) and perhaps even capturing a portion of the US domestic market itself, in the long run.

6.1.5 It is thought that the heavy demand in both 1970 and 1971 for large fire-cured crops in part reflects the trade's need to stock up after the short crops of 1968 and 1969 and that therefore the present volumes provide a rather high base on which to project future demand. Taking average FMB tobacco purchases 1968-71 of about 23 million lb. as a base, it is thought that marketed production and exports of all types of smallholder tobacco can increase to 35 million lb. by 1975 and 40 million lb. by 1980, allowing for average export prices settling down at 30 t/lb. or 20 t/lb. at auction, from their high levels in 1969 and 1970. On these assumptions the export value of smallholder tobacco would increase as follows:

	<u>1970</u>	<u>1975</u>	<u>1980</u>
K mn.	8.42	12.25	14.00

These figures could well prove to be conservative, depending on the growth of the market and production in other countries, while association with the EEC should give Malawi tobacco preferential entry to this market.

6.1.6 It is not possible to make forecasts for the different types of tobacco within these totals, but it is assumed that between 70 and 80 per cent of the tobacco will continue to come from the Northern Division (Central Region). Of this a steady 6-8 million lb. can be expected to be Sun/Air cured, plus another 1 million lb. of Sun/Air from the Central Division. Considerable efforts will be made to encourage the expansion of the Southern Division fire-cured crop from its recent disappointingly low levels back towards the record 7 million lb. bought by the FMB in 1965. Oriental tobacco has also had a disappointing record over the past decade, approaching the $\frac{1}{2}$ million lb. level thought to make the crop economically worthwhile in three years only. In general, the market prospects for Oriental tobacco are overshadowed by world overproduction and very large stocks overhanging the market. However, a different market has been identified with a fairly firm demand for 1 million lb. a year and extension effort is being geared to produce this.

6.2 Groundnuts

6.2.1 With groundnuts there is a firm and still expanding market overseas for Malawi's hand-shelled confectionery nut and at present the main constraint is on the supply side. It appears from recent surveys that well over half the crop is either eaten on the farm, sold at local markets or retained for seed, and that only the remainder finds its way to the official markets. However, FMB purchases have twice reached 47,000 short tons (in 1966 and 1967).

6.2.2 There are various constraints on production: one is the shelling and grading operations which at present have to be done by hand by the grower and his family, pending the development of a decorticating machine that does not split the kernels. Secondly, there is the competing attraction of tobacco as a cash crop. Thirdly, in the main producing areas of the Central Region there is a rotational problem which effectively limits the acreage planted under pure stand to groundnuts.

6.2.3 However, recent price increases to the grower have helped to ensure that groundnuts remain a popular cash crop; and with the effects of both general extension and intensive projects at Lilongwe and Salima there are good prospects for expansion. It is considered that ADMARC purchases of some 72,000 short tons in 1975 is well within range, progressing to 110,000 tons in 1980. The 1975 tonnage would include 4,000 tons of oil nuts for the local crushing industry and 2,000 tons of Gambia-type, grown in the lower altitudes. Domestic sales by ADMARC are projected to grow from the present level of around 3,500 to 5,000 in 1975 and 10,000 tons in 1980, leaving volumes for export of 67,000 tons in 1975 and 100,000 tons in 1980.

6.2.4 The price of confectionery groundnuts on the world market appears to have broken away from that of the less-valuable oil nuts and the Malawi Chalimbana has established its own market, enjoying a small premium, mainly in the United Kingdom. Prices for most oil seeds, including groundnuts, have been very high in 1970 and 1971 to date and the average FOR realised price for Malawi groundnuts rose from K148 a short ton in 1969 to K171 in 1970. A projected price of K160 a ton FOR has been used for 1975, easing to K150 in 1980, by which time one can expect stronger competition from other producers of confectionery groundnuts and probably some saturation of markets. Furthermore, Malawi at present enjoys a 10 per cent *ad valorem* preference on groundnuts exports to the U.K.: with British entry into EEC this would be lost, with an effect on realisation prices mainly felt after 1975. Export earnings from groundnuts could thus increase as follows:

	<u>1970</u>	<u>1975</u>	<u>1980</u>
K mn.	4.24	10.73	15.00

6.3 Cotton

6.3.1 Malawi cotton is grown entirely by smallholders and is susceptible to erratic weather conditions in the main producing area in the Southern part of the country. Thus, after a

good crop in 1965, production fell to around 13,000 tons of seed cotton in 1966, 1967 and 1968. However, in 1969, 1970 and 1971 production recovered to levels similar to that in 1965 of over 20,000 tons and over these last three years the value of exports of cotton lint has averaged some K2½ million. In 1970 approximately one quarter of the total lint output was sold to the local spinning and weaving concern. Table II.5 summarises cotton export statistics since 1964.

TABLE II.5: COTTON EXPORTS 1964-70

	1964	1965	1966	1967	1968	1969	1970
Quantity (short tons)	4,001	5,329	6,064	3,725	3,100	4,205	6,458
Average price (t/lb.)*	21.74	21.36	20.24	17.62	20.32	20.56	21.50
Total value (K'000)	1,740	2,276	2,455	1,313	1,260	1,729	2,777

* free on rail Bangula.

6.3.2 With production from Chikwawa planned to increase to 20,000 tons, and from Salima to 9,000 tons, by 1975, it is projected that total seed cotton production should reach about 42,000 tons in that year, assuming average climatic conditions. For 1980 production is projected at 63,000 tons.

6.3.3 Assuming that with improved seed the ginning out-turn can be brought back up to 33 per cent, but allowing for an expected increase in domestic requirements, export availability would appear as follows (all figures in thousand short tons):

	1970	1975	1980
Seed cotton production	23.5	42.0	63.0
Cotton lint	7.1	14.0	21.0
Domestic requirement	1.8	3.5	5.0
Export	6.5	10.5	16.0

6.3.4 The gradual decline in cotton prices which had been a feature of previous years was checked in 1970 and by the end of the year Liverpool prices were back at around 30c (US) per lb. as at the end of 1967, after the devaluation of sterling. There is some danger that continued high prices for cotton will further reinforce the tendency to substitute manmade fibres, though this may be offset by rapid cost-inflation in the industrialised countries. Provided the generally good quality of Malawi cotton is maintained, it should continue to command reasonable prices, as it blends particularly well with new synthetic fibres.

6.3.5 It seems prudent, however, to expect that the long-term price trend will continue to be gradually downward and also to allow for the fact that if Malawi decides to grow Deltapine smooth leaf cotton under irrigation in any quantity, then this may sell at a slight discount to the medium-long staple variety presently grown. Prices are therefore projected as follows:

	1970	1975	1980
K/short ton	430	400	380
t/lb. } FOR Bangula	21.5	20.0	19.0

Approximate equivalent CIF Liverpool (US c/lb.)*†. 32.0 30.9 29.7

* (allowing for a 12 per cent increase in ocean freight rates to Europe in 1971).

† assuming K1 = US\$1.2.

6.3.6 On these assumptions the export value of cotton is projected at:

	1970	1975	1980
K mn.	2.78	4.20	6.08

The price projection used could prove pessimistic if, for instance, there is a widespread consumer reaction against some of the manmade fibres in favour of natural cotton.

6.4 Maize

6.4.1 Maize is grown as the principal staple crop of the country, rather than as an export crop *per se*, and the Government's policy for maize is fully explained in Chapter III of this Statement.

6.4.2 Briefly, the policy is to maintain self-sufficiency in maize, which due to its low value: weight ratio is not a profitable export crop in normal circumstances. The maintenance of domestic self-sufficiency, however, entails producing a small margin of surplus to allow for poor harvests (at about 7 per cent of the total national production). This surplus stock is rolled over and becomes available for export once the next season's crop is well-established. Any losses on export are regarded as an insurance premium for safeguarding the national food supplies.

6.4.3 The successful prosecution of such a policy would mean that in 1975 there should be an export surplus of about 110,000 short tons and in 1980 of 125,000 short tons, assuming an average season in each case. In fact, recent detailed projections of maize requirements and supply by each District indicate that the export surplus around the middle of the decade is likely to be considerably less than 110,000 tons; while by 1980, on the other hand, average yields are likely to have improved, through the introduction of hybrid types and better management, to the extent that surplus availability will probably exceed the desired 125,000 tons. These projections do, in fact, suggest a normal-year surplus of about 50,000 in 1975, rising to about 200,000 tons by the end of the decade. Implicitly then, with these projections one is admitting the possibility that a series of bad maize harvests around the mid-1970s would have to be met partly by imports; and that the average surplus volume being produced by 1980 may be rather greater than optimal land and labour allocation would dictate. However, the Government fully recognises the vital importance of food crops, particularly in relation to the targets for export, and is taking all necessary steps to find solutions to the problems.

6.4.4 In the meantime, however, the above projections of export surplus are used (assuming a net export surplus in 1980 of 180,000 tons). It is expected that the landed long-term Europe price for white flint maize as grown in Malawi will be around £24-25 a short ton. This assumption allows for a proportion of Malawi's maize exports to the United Kingdom earning a small premium on account of its suitability for the distilling industry. But clearly if Britain decides to join the EEC the tariff policy of the Community with regard to imported agricultural products will be the major factor in determining prices. Allowing for costs of transport, an export price of K30 a short ton is assumed.

6.4.5 Thus there are major uncertainties involved in trying to forecast the value of Malawi's future maize exports; but on the assumptions outlined above export values are projected as follows:

	Average 1968-70	1975	1980
K mn.	1.71	1.50	5.40

6.5 Cassava

6.5.1. Cassava (manioc) is grown in Malawi primarily as a standby in the case of failure of other staples, as it is highly drought-resistant and can be left in the ground for a long time before uprooting. Nevertheless, it has developed into a useful export crop, with export tonnages increasing ten-fold in the four years between 1964 and 1968.

TABLE II.6: CASSAVA EXPORTS 1964-70

	1964	1965	1966	1967	1968	1969	1970
Quantity ('000 s. tons)	4.5	5.8	27.5	23.5	52.6	24.2	24.5
Value (K '000)	122	136	692	532	1,384	638	724
Price FOB (K/l. ton)	27.1	23.4	25.2	22.6	26.3	26.4	29.6

6.5.2 Marketing of cassava has until recently been entirely in the hands of private traders, but in 1971 responsibility for its marketing and development was entrusted to National Oil Industries Limited, a subsidiary of the MDC. This company is already buying washed and dried cassava through its agents in the Southern Region and has plans to provide a market for the crop in the Central Region lakeshore area. On the basis of present plans it seems reasonable to project export surpluses of 40,000 tons in 1975 and 50,000 tons in 1980.

6.5.3 Imports of cassava into the EEC have risen very rapidly, reaching a million tons in 1970, as a result of the price structure under the Common Agricultural Policy (CAP) which makes cassava a relatively cheaper fattening agent in compound animal feeds than maize or barley. With rapidly growing demand for meat there will be a continued rapid growth in the market for feedstuffs. Provided CAP grain prices are not drastically reduced in response to larger surpluses, cassava should still remain highly competitive, in spite of its slightly inferior nutritional value, and stand in a position to gain an increased share of this growing market.

6.5.4 However, it is extremely difficult to try to forecast the actual course of future prices for this commodity in the European market, since EEC import prices depend to a large extent on the balancing of political, rather than purely market, forces. It could be that the continued successful penetration of some of the European markets could bring about some reaction in the form of a higher tariff or restrictions. Over the last seven years export prices for Malawi cassava have ranged between K22 and K30 a ton (FOR), averaging just under K26 a ton. In the absence of any firmer guides to future prices a continued price of K26 a short ton has been used in the projections, giving export values as follows:

	<u>1970</u>	<u>1975</u>	<u>1980</u>
K mn.	0.72	1.04	1.30

The possibility of improving the quality of Malawi cassava chips by installing new processing plant is being investigated. This could raise these values somewhat further.

6.6 Rice

6.6.1 Between 1964 and 1969 Malawi's rice exports (mostly to Rhodesia and Zambia) remained at a fairly static level, averaging some 1,700 tons of milled rice a year with a value of only around K200,000; production of paddy rice purchased by the Farmers Marketing Board averaged about 5,000 tons a year. However, in 1970 the first results of the major development efforts in rice began to make themselves felt. Paddy production rose to nearly 11,000 tons, a new record; and in spite of a rapid increase in domestic sales of rice, exports rose to 3,100 tons, with a value of over K0.5 million.

6.6.2 Agronomically, it is thought that Malawi is probably capable of producing 200,000 tons of paddy a year, though the widespread use of irrigation and high-yielding varieties. Up to now, however, Malawi's relatively small rice exports have benefitted from exceptionally high prices by world standard in neighbouring markets, where by location or agreement Malawi enjoys a preference. At the greatly increased volumes envisaged, it seems clear that Malawi will have to compete with other producers in Africa, the Far East and the United States at ruling world prices. The effect of preferential trade agreements cannot be expected to change this fact significantly.

6.6.3 Present projections indicate that marketed production of paddy will reach 36,000 tons in 1975. Most of the increase during this period will come from the small irrigation settlement schemes rather than large projects, but the figure includes 7,000 tons from the Karonga Development Project, which it is assumed commences operations in 1972. It is also assumed that smallholder rainfed production can be increased from 9,000 tons to 12,000 tons by 1975, even though there is no likelihood of any increase in grower prices for paddy being justified. During the 1976-80 period it is expected that several major new

irrigated projects will come into operation, and at present these are based mainly on rice production, until suitable alternative high-value crops can be proved. On present plans it is tentatively projected that marketed paddy production by 1980 may amount to 120,000 tons; however it is reasonable to expect that a good part of this 120,000 tons at present assumed to be rice will by 1980 in fact consist of other crops presently undergoing research.

6.6.4 World prices for rice have fallen drastically over the last three years. The FAO export price index, covering private trade and government contracts, as yet shows no sign of a halt in this decline. It reached a peak of 158 in March 1968 (average 1957-59=100), and came down to 134 at the beginning of 1969, where it appeared to be stabilising for a while. However, between mid-1969 and March 1970 the index fell another 30 points. In the closing months of 1970 prices again weakened and in November the index stood at 98, representing a fall since March 1968 of 38 per cent in 32 months. Generally speaking rice export prices during 1970 were 20 per cent below the corresponding periods of 1969. Thailand 5 per cent broken, for example, which in September 1969 was selling for \$186.7 per metric ton FOB Bangkok was being quoted a year later at only \$142.2 per metric ton. Most recent studies of the world rice market seem to agree that prices are not likely to improve; with the increased efforts to achieve self-sufficiency in many countries, and the larger stocks currently held (particularly in Japan), it is thought probable that export surpluses will expand in the face of a nearly static or even diminishing import demand.

6.6.5 Quoted prices for Thailand 5 per cent have recently been around US \$130 per metric ton FOB Bangkok, which landed at South African ports equates to \$150-155 per metric ton. It is thought that this is about the level of prices that can be expected in the long term. Malawi super grade rice, however, is probably more comparable with Thailand 15 per cent broken, which sells at a discount of between \$5 and \$10 a ton. Thus one can expect that in the long term Malawi rice will have to compete with rice from the Far East and the US (which continues to subsidise its rice exports) and that this will be landing at South African ports at between \$140 and \$150 a metric ton (or say K110 per short ton).

6.6.6 Taking account of all these factors, including preferential prices for Malawi rice in neighbouring markets and the present rebates on rice exported to South Africa, a projected price has been agreed per short ton of rice (FOR Blantyre) of K130 in 1975, falling to K110 in 1980. The decline in average price between 1975 and 1980 results from the smaller proportion of total rice exports to preferential markets.

6.6.7 On these assumptions, it is projected that total export earnings from rice (or alternative crops on irrigation schemes) will be as follows:

('000 short tons)	1970	1975	1980
Paddy purchases	10	36	120
Milled rice	7	24	80
Domestic market	3	4.5	6
Export market	3	19.5	74
Price per short ton (K)	178	130	110
Value (K mn.)	0.56	2.53	8.14

6.7 Pulses

6.7.1 In good seasons between 25,000 and 30,000 tons of various peas and beans have been bought for export, at a value of some K1.5 million. In a year of poor maize harvest, such as 1970, exports have generally fallen to around 10,000 tons.

6.7.2 The pulses presently produced are of very mixed type and grade and do not command high prices on world markets, though for limited quantities in neighbouring countries

a reasonable price can be obtained. There are possibilities for introducing soya beans, but not necessarily for direct export. Also the processing of selected varieties may provide a means of developing more profitable exports, if this is proved to be feasible.

6.7.3 However, at present no spectacular increase in exports of pulses is expected and export volumes are projected at 25,000 tons in 1975 and 30,000 in 1980, at an average price of K80 a ton. This gives export earnings of:

	<u>1970</u>	<u>1975</u>	<u>1980</u>
K mn. -	1.04	2.00	2.40

6.8 Coffee

6.8.1 Coffee was once a major export product of the territory and in 1908 over 450 tons were exported. Now it is relatively much less important and in recent years production and exports have averaged 200 tons a year, of which about two-thirds is grown by smallholders, mostly in the North.

6.8.2 However, prices paid to growers have been improved; a Coffee Development Authority is being set up; and there are now signs that growers are beginning to respond. Production and exports are expected to increase to 500 tons in 1975 and 800 tons in 1980. Export prices have improved considerably in the last two years, but the present very high prices to some extent reflect the difficulties being experienced in Brazil and it is reasonable to expect some decline in future years. Export earnings are therefore projected as follows:

	<u>1970</u>	<u>1975</u>	<u>1980</u>
K mn. -	0.10	0.30	0.44

Values could be higher if estates decide to expand their coffee production.

6.9 Other Crops

There is a considerable range of minor crops undergoing research or development, which show promise of being useful exports during the decade. The most important of these at present is probably sunflower seed, exports of which were over 3,000 tons in 1969, valued at K170,000. Annual exports at 5,000 tons worth about K0.4 million a year can be expected. Sisal is no longer exported, but for certain types of nuts, particularly macadamia and cashew, there are very good prospects. There is also a possibility that Malawi may embark on the rearing of silkworms as a cottage industry to produce silk cocoons or yarn for export. It is not practicable to estimate individual values for all these possibilities but values are allowed for in the projections as follows:

	<u>1970</u>	<u>1975</u>	<u>1980</u>
K mn. -	0.1	0.6	1.1

6.10 Summary of Smallholder Crop Exports

Summing the above projections, a very rapid rate of growth in smallholder crop exports is projected for the 1970-1980 period, averaging 11.6 per cent. a year, or a trebling in monetary value in ten years.

	<u>1970</u>	<u>1975</u>	<u>1980</u>
K mn. -	17.95	35.14	53.86

There is some lee-way in the price projections, but if they are even broadly correct then the rate of growth in volume terms will have to be faster still.

6.11 The above projections for crop exports both smallholder and estate, are aggregated in Tables II.7 and II.8.

TABLE II.7: CROP EXPORTS 1970-80 (VOLUMES AND PRICES)

Crop	1970		1975		1980		Notes
	Volume	Price	Volume	Price	Volume	Price	
Tea	39.04	28.0t	46.5	24t	55.3	24t	(1)
Tobacco: fire/air-cured	23.41	36.0t	35	35t	40	35t	(1) (2)
flue cured	7.75	60.5t	17	50t	20	50t	(1)
Burley	7.15	48.7t	17	40t	20	40t	(1)
Groundnuts	24.81	K171	67	K160	100	K150	
Cotton	6.46	K430	10.5	K400	16	K380	
Maize	—	—	50	K 30	180	K 30	
Cassava	24.48	K29.6	40	K 26	50	K 26	
Rice	3.12	K178	19.5	K130	74	K110	
Pulses	11.01	K 94	25	K 80	30	K 80	
Coffee	0.15	K680	0.5	K600	0.8	K550	
Tung Oil	1.25	K328	1.0	K300	1.0	K300	
Sugar	—	—	22.5	K 80	48	K 80	

Notes: (1) tea, tobacco in million lb. and t/lb.; all other crops in short tons and K/ton, except tung oil (long tons).

(2) includes Other Tobacco (2.4 million lb. in 1970) such as Oriental.

(3) all prices are estimated FOR Malawi border.

TABLE II.8: CROP EXPORTS 1970-80 (PROJECTED VALUES K mn.)

Crop	Actual 1964	Actual 1968	Actual 1969	Actual 1970	Projected 1975	Projected 1980
Tea	6.68	9.70	9.53	10.92	11.16	13.27
Tobacco: fire/air cured	5.75	5.98	6.42	8.42	12.25	14.00
flue cured	0.87	2.38	2.96	4.69	8.50	10.00
Burley	1.82	2.20	3.27	3.49	6.80	8.00
Groundnuts	2.23	4.62	5.59	4.24	10.72	15.00
Cotton	1.93	1.27	1.73	2.78	4.20	6.08
Maize	0.48	3.01	2.13	—	1.50	5.40
Cassava	0.12	1.38	0.64	0.72	1.04	1.30
Rice	0.13	0.09	0.27	0.56	2.53	8.14
Pulses	1.53	0.86	1.02	1.04	2.00	2.40
Coffee	0.08	0.11	0.10	0.10	0.30	0.44
Tung Oil	0.43	0.25	0.31	0.41	0.30	0.30
Sugar	—	—	0.15	—	1.80	3.84
Other crops	0.10	0.07	0.17	0.09	0.60	1.10
TOTAL CROPS	22.14	31.94	34.29	37.46	63.70	89.27

Annual growth rates ... (%)

1964-70 9 1975-80 7
1970-75 11 1970-80 9

7 Manufactures

7.1 Following the distinction made in Chapter V (section 1.1.1), exports of manufactured goods are divided into those produced by supply-based and by demand-based industries. Supply-based goods are mainly processed agricultural or other natural products, other than long-established manufactured products such as tea, tobacco and now sugar, which have been included under the crop projections. Demand-based industries' inputs mainly consist of materials other than domestic agricultural produce: exports of demand-based manufactures can basically be regarded as a useful by-product of the process of import-substitution. The growth of manufactured exports within these two categories since 1964 is shown in Table II.9.

TABLE II.9 EXPORTS OF MAIN MANUFACTURES (K'000)

	1964	1968	1969	1970
(1) Demand-based				
Cement	—	178	—	—
Chemical products (i)	8	15	35	27
Fishing nets and cordage	85	27	27	27
Cotton piece goods	—	—	10	6
Blankets	—	—	—	1
Knitwear	—	20	78	55
Clothing, other	—	91	133	155
Shoes	—	51	256	313
Agricultural implements	—	21	100	88
Other metal and machinery	2	121	102	237
Waste metal	38	86	54	134
TOTAL	133	610	795	1,043
(2) Supply-based				
Fish	19	51	171	300
Hides and skins	98	166	182	225
Oil cake	134	288	362	343
Oil seeds (ii)	3	6	55	164
Cotton seed oil	67	—	—	—
Groundnut oil	—	—	34	—
Ninde oil	—	—	5	—
Rare earths	—	—	—	20
Canned fruit (iii)	—	—	—	29
Paper products	1	72	27	87
Wood products	142	131	105	165
Glycerol	11	47	82	67
Molasses	—	—	32	29
Precious stones	—	11	82	127
Electric current	—	4	18	23
TOTAL	475	776	1,155	1,579
TOTAL (1) and (2)	608	1,386	1,950	2,622

NOTES: (i) including general chemicals, fertilisers, paints and plastics.
(ii) excluding groundnuts; including cotton and castor seeds.
(iii) including juices.

7.2 Supply-based goods

7.2.1 Projections for this category are dominated by the single item for pulp and paper. A major project to establish a pulping industry in Malawi has been envisaged for the last fifteen years and the necessary plantations will be reaching maturity in a few years time. The market prospects for Malawi pulp/kraft paper have now been established and the final stage only awaits a detailed engineering feasibility study. Prospects for the project now appear sufficiently firm to include a figure for exports of K13 million in 1980.

7.2.2 The Government's Forest Industries Division has also been active in exploring new export markets for other manufactured timber products, such as furniture components, mosaic parquet flooring and finger-jointing and prospects for fairly substantial exports of about K1 million by 1980 seem good. Another major supply-based possibility is in dehydrated vegetables, which is still at the research and development stage, but if trials are successful could lead to exports of an estimated K2½ million by 1980. Other important manufactured export products of vegetable origin are oil cake, canned fruit and juices, and molasses; altogether vegetable-origin products, other than pulp/paper, will account for a constant two-thirds of all supply-based manufactured exports.

7.2.3 Supply-based manufactures of animal origin consist chiefly of fish (for these purposes, included whether chilled, dried or smoked) and by-products of the livestock/meat industry, such as hides and skins. Together these should amount to almost K1 million by 1980.

7.2.4 As for minerals, prospects for exports (and indeed for the whole economy) would be revolutionised if the Mulanje bauxite deposits were to be exploited during the 1970s. There are thought to be distinct possibilities that this may occur and, if so, very preliminary estimates would suggest export earnings (gross) of some K62 million a year, equivalent to another 50 per cent of the 1980 projection for domestic exports. However, it would clearly be wrong at this stage to base macro-economic projections around such a large single development until its realisation is fairly certain and therefore no inclusion in the export projections is made for bauxite, alumina or aluminium. There is, however, considerable interest being shown by prospective developers in a variety of other mineral possibilities, particularly rare earths such as monazite and strontianite, as well as a small pipe of gemstones. It is thought that on a fairly conservative estimate export earnings could reach K1 million by 1980. There have also been some fairly small exports of kyanite to UK and South Africa; and there are some indications of nickel, chromium, copper, niobium and rutile. If any of these are found to be on a scale justifying commercial exploitation, then the export forecast for minerals could be boosted very considerably.

7.2.5 The export projections for supply-based manufactures are summarised below in Table II.10. Even excluding bauxite, this category offers much more scope than import-substitutes for rapid export growth over the next five and ten years. The size of the domestic market (in most cases very small) does not act so strongly as a constraint. The competitive position of these exports is generally superior, partly because the minimum economic scale of production tends to be smaller. Finally, a number of these products (such as oil-cake, fish and hides and skins) are in high world demand, so that the constraints on expansion are almost entirely from the supply side. Thus, in many cases their expansion depends on the overall rate of agricultural development.

7.3 Demand-based goods

7.3.1 The growth of exports of demand-based manufactures since 1964 has been in industries set up to serve a growing domestic market for products such as shoes, clothing, food and drink, farm implements and other metal goods. Most of these industries will continue to require a sizeable domestic market relative to export markets. This requirement of a minimum desirable domestic-export production ratio is likely to be particularly cogent for Malawi manufacturers, because the major markets for such products at present

are both highly concentrated and in the long-run, potentially uncertain. In the last two years, over half of Malawi's exports of demand-based manufactures have been to Zambia, with Rhodesia taking another third. Moreover, in recent years dependence on these two markets has been growing, not diminishing.

7.3.2 Apart from this, there are other factors likely to hold future levels of exports of these products well within their supply limits. The first is that because of the many similarities between Malawi and the other less-developed economies surrounding her, Malawi's import-substitutes are generally identical to those being developed in her existing and potential export markets. Thus expansion of competitive exports to these countries tends to be a self-limiting process (often at quite low levels of exports) because the more successfully such markets are penetrated, the greater becomes the certainty of restrictions on their entry by tariff or quantitative barriers.

7.3.3 Secondly, for many industries it is difficult to compete with other suppliers, often from overseas, in terms of either price or quality or both. This is partly because plant sizes in Malawi are often tiny relative to the normally accepted minimum economic scale in these industries, so that many economies of scale are unavailable; but also because most of the transport routes out of Malawi are poor and lead to high economic and user costs for freight to potential export markets. For the same reason the landed cost of imported inputs for manufacturing also tends to be high.

7.3.4 Thirdly, the importance of marketing and export promotion cannot be overstressed if Malawi is to realise anything like its full export potential in the field of demand-based manufactures. In addition there is considerable room for improvement of quality and standardisation of product, both of which are preconditions for success in selling to the developed economies. Unless this and the other constraints mentioned can be overcome there is likely to be little advantage to be gained from the slightly easier access to markets of the industrialised countries now afforded by the scheme of Generalised Preferences. The importance attached to export marketing and the development of new sales channels is to be given shape in a new Export Promotion Council, whose job it will be to clear the path for export growth, particularly in manufactured goods.

7.3.5 These various constraints have been mentioned explicitly to indicate that the projections for exports of demand-based manufactures have been made in the full awareness of the problems involved from the marketing end, rather than in a euphoric review of supply potentialities.

7.3.6 However, with this in mind, it is thought that prospects are good for exporting cotton piece goods, shoes, clothing, knitwear and blankets. With new plant being installed there should be some spare capacity in the cement industry at least till 1980, with a good chance of continued exports to eastern Zambia, where there is a transport advantage. Fishing nets and cordage appears to have cornered some expanding markets; and there should be continued growth in exports of farm implements and other light machinery. It is thought too, that exports can be expanded in the field of chemical products, including general chemicals, fertilisers, paints and plastics, including plastic piping. The projections for the various individual items total to the following:

	<u>1970</u>	<u>1975</u>	<u>1980</u>
K mn.	1.04	2.24	3.92

This projection is based entirely on existing industries and products. The setting-up of totally new import-substituting industries with export potential would serve to quicken the rate of growth here, but at present it is not possible to predict what industries these might be.

7.4 Summary

The export projections for supply- and demand-based manufactures are summarised in Table II.10.

TABLE II.10: SUMMARY OF EXPORT PROJECTIONS—MANUFACTURES (K'000)

	1970	1975	1980
Supply-based*			
Animal origin .	525	600	900
Vegetable origin .	1,034	2,750	17,750
Mineral origin .	20	700	1,000
TOTAL	1,579	4,050	19,650
Demand-based			
Cotton piece goods	530	1,500	2,800
Knitwear			
Clothing, other			
Shoes			
Blankets			
Metal products .	459	400	600
Other .	54	340	520
TOTAL	1,043	2,240	3,920
TOTAL MANUFACTURES .	2,622	6,290	23,570

* Note that the projections for supply-based manufactures include some items (such as fish and hides + skins) which in Table II.1 at the beginning of this Chapter were included under "Other Miscellaneous Commodities."

8. Invisibles (Non-factor services)

8.1 The rate of growth projected for exports of non-factor services between 1970 and 1980 follows closely the rate projected for exports of goods (namely 11 per cent a year on average). Total receipts from exports of services are projected as follows:

	1970	1975	1980
K mn.	8.09	13.04	21.93

The increases in imports of goods and services induced by the growth of tourism, for example, are allowed for in the import projections contained in Chapter V.

8.2 The following notes explain how the various items are projected.

8.2.1 International freight and insurance: this consists of carriage by Malawi Railways and road transporters of Malawi imports and exports outside Malawi's borders, plus claims paid by foreign insurers on lost or damaged imports. Receipts are projected to increase in line with merchandise trade, at 9 per cent a year.

8.2.2 Other transportation: this consists largely of Air Malawi's earnings and fares from abroad, fares paid to Malawi Railways by non-residents and returning migrants; and landing fees, sales of fuel and repairs to foreign aircraft using Malawi airports. There has been a large increase as a result of Air Malawi's contract to carry Witwatersrand Native Labour Association (WENELA) mine employees to South Africa, but this is probably not a growth item. Earnings from transport are projected to grow in line with tourism, at a rate of 15 per cent a year.

8.2.3 Tourism: the values projected here represent the gross receipts from all foreign visitors, whether here on business or holiday, on local goods and services. The net value of tourism to the economy is of course very much smaller—probably less than half—due to the additional imports needed to cater for visitors' demands. The figures used represent

a median projection and could vary widely in either direction, depending on the rate at which foreign investment can be attracted and the degree to which other Government policies facilitate the attraction of greater numbers of tourists. With even the limited hotel and transport facilities presently available, the number of tourists coming to Malawi, and their average expenditure, is showing a healthy rate of increase. Very considerable efforts are being made throughout the industry under the guidance of the Department of Tourism to promote the image of Malawi as a centre for tourism, but a great deal still needs to be done in the improvement of road and air transport links (described in Chapter IV) and building of new hotels, which is being undertaken or planned by a number of concerns. An overseas consultants' report has provided a clear indication of the share of the Southern African tourist market that Malawi can aim to attract, together with a master-plan of the investment necessary to do so. Given the successful implementation of the plan it may well prove reasonable to aim at a target as high as K10 million gross earnings by 1980. However, it is too early yet to anticipate the detailed programme of investment in tourism and a 15 per cent growth rate is assumed.

8.2.4 Government: about two-thirds of this item consists of local expenditure by foreign technical assistance personnel and one-third of expenditure on local goods and services by foreign embassies and missions. Receipts are expected to grow at about 7 per cent a year, since there is not likely to be a very rapid increase in the number or size of foreign embassies or in the amount of technical assistance.

8.2.5 Non-merchandise insurance: this consists of claims received from foreign insurance companies on life, vehicles and property in Malawi. It is not expected that the development of local insurance institutions will affect the growth in these receipts, since a large proportion of total risks will continue to be re-insured outside the country. Insurance is usually a rapid growth industry in a situation of increasing commercialisation and monetary awareness, so a growth rate is projected of 15 per cent a year.

8.2.6 Other services: this consists in roughly equal proportions of management fees, wages and salaries transferred in by foreign-based financial institutions, agency fees and commissions. About a third of this total can be expected to remain static, while the rest is projected to grow at 8 per cent a year, or in line with the growth in GDP.

8.3 The projections for exports of non-factor services are shown in Table II.11 below:

TABLE II.11: EXPORTS OF NON-FACTOR SERVICES 1964-1980 (K mn.)

	1964	1968	1969	1970	1975	1980
1. International freight and insurance	0.42	1.75	0.80	0.87	1.34	2.06
2. Transportation	0.35	0.48	0.55	0.61	1.23	2.47
3. Tourism	0.51	0.94	1.05	1.08	2.17	4.37
4. Government	0.60	2.26	2.15	2.30	3.22	4.52
5. Non-merchandise insurance	0.54	0.85	1.07	1.23	2.47	4.97
6. Other services	0.73	1.70	1.86	1.96	2.60	3.54
TOTAL	3.15	7.99	7.48	8.09	13.04	21.93

On these projections exports of non-factor services will maintain a constant 16 per cent share of total domestic exports. At the beginning of this Chapter it was pointed out that imports of these services have been increasing very much faster than exports with a resulting very rapid increase in the "gap" on invisibles. Taking the import projections from Chapter V, the gap will continue to widen during the 1970s, from approximately K13 million in 1970 to K20 million in 1980. However, unlike the 1964-1970 period, exports of services are expected in the 1970s to increase at a rate (10½ per cent a year) faster than imports of services (only 7½ per cent a year): thus the gap on invisibles will fall as a percentage of total imports, from 14 per cent in 1970 to 11 per cent in 1980 (and to only 8 per cent if tourism earnings reach K10 million by 1980, which is not impossible).

9 Conclusion

9.1 All the projections described above for exports of crops, manufactures and services are summarised in Table II.12 on page 30 and shown in Figure II.1 on page 31. After allowing for the necessary balance-of-payments adjustments to be made to the values of merchandise exports, and adding in re-exports as a constant item, total export earnings are expected to grow at a roughly constant rate of 10 per cent a year through the decade. However, leaving aside re-exports, which in any case only contain a 20 per cent Malawi value-added content, total domestic exports (including invisibles) are projected to increase at a rate of 10½ per cent a year (as compared with an average of 11 per cent achieved between 1964 and 1970, partly due to increased prices). At a rate of 10½ per cent growth a year, domestic exports will maintain a roughly constant one-third share of monetary GDP. As a proportion of total GNP, including the non-monetary sector, which is expected to grow over the decade at 8 per cent a year, domestic exports will represent an increasingly important share during the plan period, as shown in Table II.13 below, rising from 19 per cent in 1970 to 24 per cent in 1980.

TABLE II.13: PROJECTED EXPORTS AND GDP (K mn.)

	1970	1975	1980	Growth rate % 1970-80
1. Total GNP at market prices	266.0	385	581	8
2. Monetary GDP at factor cost	152.2	243	409	10½
3. Total exports	55.6	92	145	10
4. Total domestic exports	49.3	85	137	10½
5. (4) as percentage of (1)	19	22	24	
6. (4) as percentage of (2)	32	35	34	
7. (3) as percentage of (2)	37	38	36	

It is clear, therefore, that as earnings from domestic exports will continue to represent over 30 per cent of monetary GDP, there will be no decline during the plan period in the vital importance of exports as a generator of additional domestic incomes in Malawi. Between 1970 and 1980, in fact, incremental exports are projected to comprise 34 per cent of the increase in monetary GDP, a relatively high ratio by world standards.

9.2 Export Growth at Constant Prices

Attention was drawn in section 4 above to the fact that while over the past six years prices for Malawi's exports have risen considerably (by 23 per cent 1964-70), a contrary trend is expected for the coming period. This means of course that a higher rate of growth in volume terms is needed to maintain the same rate of growth of values. In order to indicate what is required, the following Table II.14 compares the export projections for crops at their projected current prices with their values at constant prices. The rate of growth at constant prices can then be regarded as an index of the required increases in export production in straight volume terms.

TABLE II.14: CROP EXPORTS (1964-80) AT CURRENT AND CONSTANT PRICES (K mn.)

	<u>1964</u>	<u>1970</u>	<u>Growth rate 1964-70</u>	<u>1970</u>	<u>1980</u>	<u>Growth rate 1970-80</u>
at current prices:						
Estate crops	9.8	19.5	12.2%	19.5	35.4	6.1%
Smallholder crops	12.3	18.0	6.4%	18.0	53.9	11.6%
Total crops	22.1	37.5	9.1%	37.5	89.3	9.1%
at constant prices:*						
Estate crops	9.8	16.6	8.4%	19.5	43.5	8.4%
Smallholder crops	12.3	13.8	1.9%	18.0	62.9	13.4%
Total crops	22.1	29.8	5.1%	37.5	106.4	11.0%

* for 1964-70 comparison, at 1964 prices;
for 1970-80 comparison, at 1970 prices.

The above table shows that the effect of the projected price declines for various export crops is to reduce the annual rate of growth of export receipts by some 2 per cent. Consequently, while the real growth in production from the estate sector remains constant, as compared with the 1964-70 period, smallholder export production must accelerate very rapidly from just under a 2 per cent a year growth rate to over 13 per cent. This is not nearly as difficult as it might at first sight appear, as a given increase in total smallholder production tends to give a much greater percentage increase in the volume of marketed surplus. Nevertheless, there cannot afford to be any slackening in the impetus given to smallholder agriculture through extension, projects and marketing services—policies for which are set out in Chapter III.

9.3 Export Product Diversification

One of the objectives mentioned at the beginning of this Chapter was to try to reduce the dependence of export earnings on a few crops. As Table II.15 below shows, the fulfilment of the export projections will in fact also bring about a much greater degree of product diversification. The present dependence on two crops, tea and tobacco, for well over half the total domestic exports falls to a third by 1980; while crops as a whole fall from three-quarters of the total to less than two-thirds. Manufactures, on the other hand, with the inclusion of Vipya pulp/paper, increase their share from 5 to 17 per cent. The expected diversification of exports in the 1970-80 period is shown graphically in Figure II.2 on page 32.

TABLE II.15: EXPORT DIVERSIFICATION

	<u>1970</u>		<u>1975</u>		<u>1980</u>	
	<u>K mn.</u>	<u>%</u>	<u>K mn.</u>	<u>%</u>	<u>K mn.</u>	<u>%</u>
Total domestic exports	49.3	100	84.7	100	137.4	100
Crop exports	37.5	76	63.7	76	89.3	65
Manufactures	2.6	5	6.3	7	23.6	17
Tea + tobacco	27.5	55	38.7	46	45.3	33
Tea + tobacco + groundnuts	31.8	64	49.4	58	60.3	44
Rice	0.6	1	2.5	3	8.1*	6
Sugar	—	..	1.8	2	3.8	3
Tourism	1.1	2	2.2	3	4.4	3

* Part of 1980 rice exports is itself expected to be diversified into other irrigable crops.

9.4 The export projections set out in this Chapter will require a major and sustained effort by all sections of the community if they are to be fully realised. Furthermore, the battle to produce more agricultural produce for export is likely to have to be fought without the important incentive of rising world prices as in the past. In some cases a situation of sluggish world demand will place a high premium on improvements in both quality and sales promotion. And yet, the fulfilment of these projections is absolutely necessary if the benefits of an improved standard of living indicated in Chapter IX are to be available for a growing population. The achievement of these goals requires the continued partnership of people, business and Government. For its part, Government's policies to ensure success are described in the succeeding Chapters.

TABLE II.12: SUMMARY OF EXPORT PROJECTIONS (VALUE K mn.)

	1964	1968	1969	1970	Annual Growth rate (%) 1964-70	1975	Annual Growth rate (%) 1970-75	1980	Annual Growth rate (%) 1975-80	Annual Growth rate (%) 1970-80	Notes
1. Crops	22.14	31.94	34.29	37.46	9	63.70	11	89.27	7	9	
2. Manufactures	0.61	1.39	1.95	2.62	28	6.29	19	23.57	30 (15)*	24 (15)*	
2.1 Demand-based	0.13	0.61	0.79	1.04	41	2.24	16½	3.92	12	14	
2.2 Supply-based	0.48	0.78	1.16	1.58	22	4.05	21	19.65	37 (10½)*	29 (15)*	
3. Miscellaneous items	0.26	0.23	0.35	0.26		0.30		0.40			(1)
4. Total goods	23.01	33.56	36.59	40.34	10	70.29	11	113.24	10	11	
5. BOP adjustment	0.28	0.76	0.51	0.84		1.36		2.22			(2) (4)
6. NF services	3.15	7.99	7.48	8.09	17	13.04	10	21.93	11	10½	
7. Total domestic exports	26.44	42.31	44.58	49.27	11	84.69	11	137.39	10	10½	
8. Re-exports	1.07	5.68	6.18	6.30		7.40	..	7.40	..	..	(3)
9. Total exports	27.51	47.98	50.76	55.57	12½	92.09	10	144.79	9½	10	

Notes: (1) includes postal packages, railway locomotive parts, books + newspapers etc.

(2) adjusted for returned exports, migrants effects, and to include freight to border.

(3) adjusted to exclude returned imports, contractors equipment etc. and non-commercial transactions.

(4) about 2 per cent of Total goods.

* (excluding pulp/paper exports at K13 mn.)

Fig. II. 1: Projected Growth of Exports 1970-80
(K.mn)

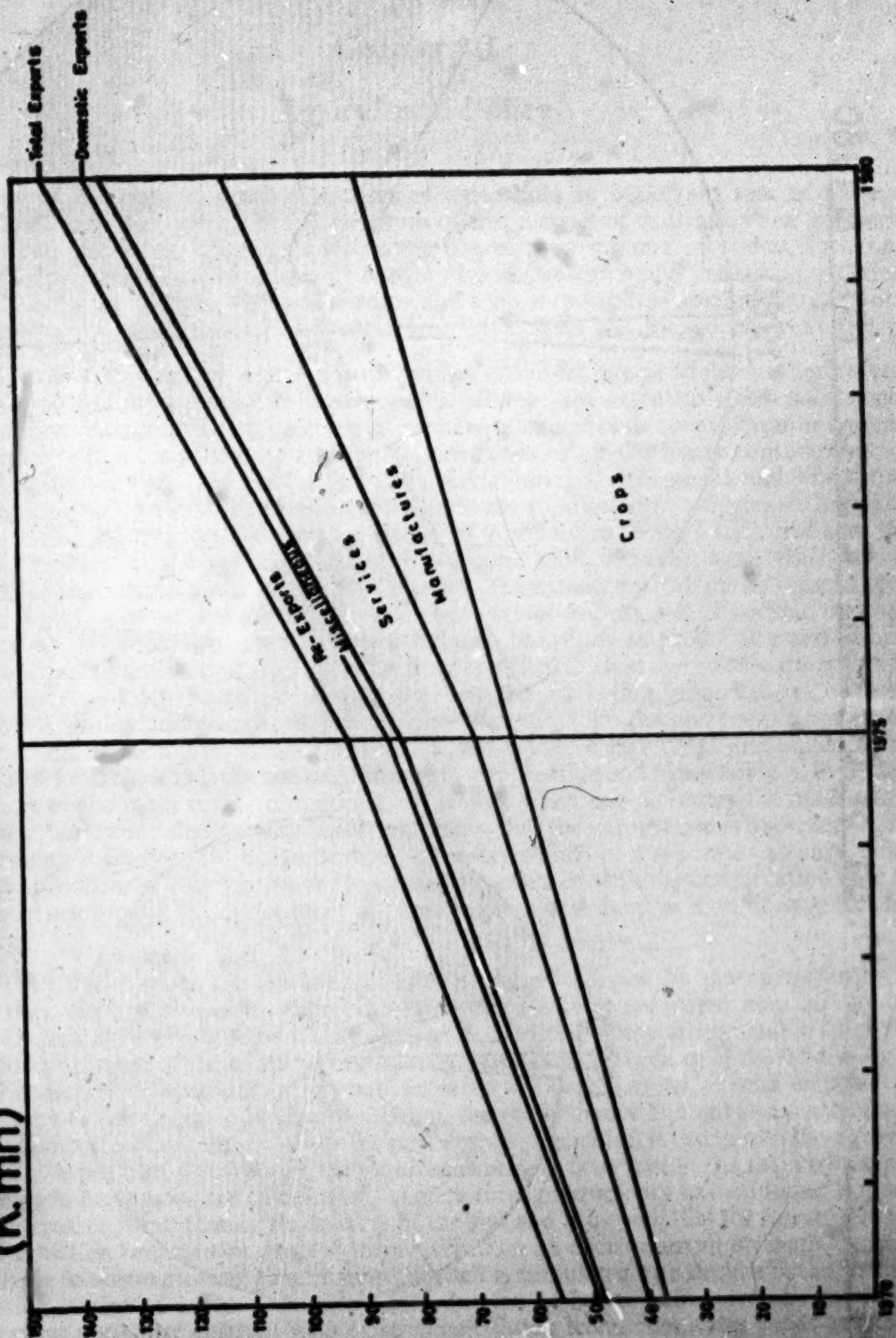
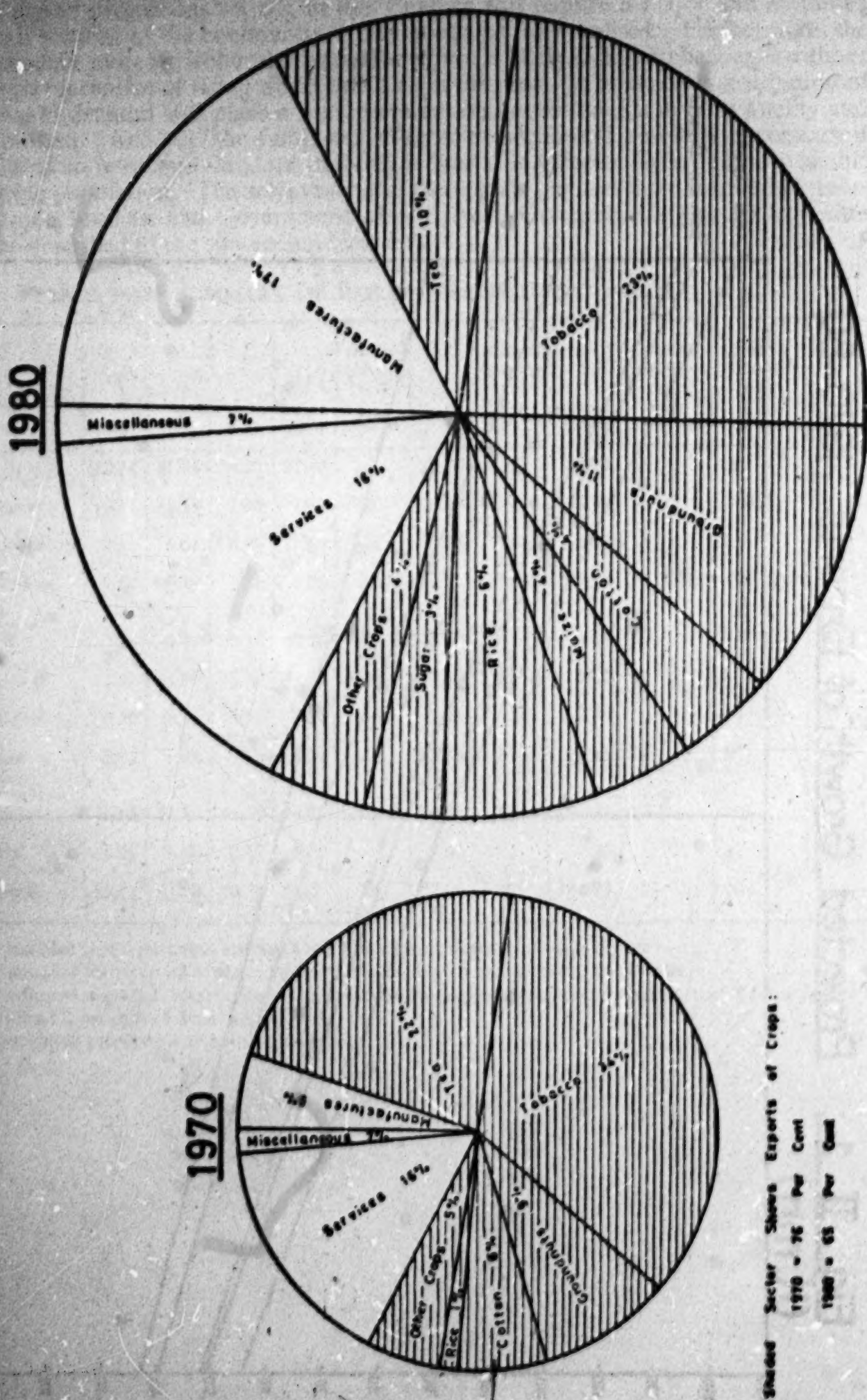


Fig. II 2: Composition of Domestic Exports 1970 & 1980



Chapter III

Agricultural Policy

1 General

1.1 One of the most noticeable features of agriculture in Malawi is that of variety. Agricultural activities cover a broad spectrum of crops, types of cultivation and holdings. The agricultural sector is influenced to some degree by a number of bodies, including various Departments of Government, statutory bodies, research and marketing organisations, the crop associations of estate growers and crop authorities of smallholders. If one also considers livestock, forestry and fisheries, as this chapter will, the scope is even wider.

1.2 In spite of this variety, one can distinguish a broad feature of Malawian agriculture which would call for attention in any economic survey: the extent to which subsistence activities predominate. The preponderant element in exports has always been of agricultural origin, yet most production within this sector is either for home consumption or traded locally, and the amounts sold to the Agricultural Development and Marketing Corporation (ADMARC) are small in relation to the total quantity of produce annually grown. The 1968/69 National Sample Survey of Agriculture (NSSA) indicated that the production of maize, the basic food staple, was around 1,246,000 short tons, while sales to the FMB in that season amounted to 58,000 tons. The extent to which maize is exchanged in local trade or processed into traditional beer is not known, but it is clear that any policy which is aimed at maize must be directed to the whole of production and cannot afford to concentrate on that small portion which reaches the market. The same is true to a lesser extent of all the crops handled through the marketing organisations; pulses, groundnuts, paddy and cassava all have a large element of production for the home and local market; tobacco and cotton, while to a greater extent cash crops, are influenced by the state of local trade and the size of food surpluses. Fishing and fish-trading is, in certain areas, one of the main rural occupations. It is only when one considers the main estate crops, tea, burley and flue-cured tobacco and sugar, that the importance of subsistence and rural trading dwindles into insignificance. Forestry stands in a separate category, since the main producer is a Government Department concerned with the conservation of land and water resources, the development of game reserves and the provision of materials for industry.

1.3 Policy decisions in the agricultural sphere are conditioned by the environment in which they have to be made. The NSSA indicated a total cultivated area in 1968 of 3,364,200 acres, 78 per cent of which were under maize. Despite reasonable soils, the mountainous nature of the country precludes constant mono-cropping of the land without special conservation measures in all but the most favourable areas. Great emphasis is attached by Government to land conservation, the maintenance and enhancement of soil fertility and correct land usage. Over the past decade population is thought to have grown by about 2½ per cent a year and food requirements have been met in the main by a rapid expansion in acreage under cultivation. Agricultural productivity has exhibited a much slower increase. Maintaining the fertility of the soil and thus potential for future agricultural production becomes increasingly more difficult with encroachment on lands that are more liable to severe erosion. Encroachment itself is stimulated by a decline in the fertility of existing cultivated lands, making the introduction of better techniques of cultivation more urgent and more costly. With existing cultivation techniques, crop yields and loss of fertility, parts of the Southern Region could be faced with an insufficiency of land to meet food requirements by the end of the decade. However, the potential for large increases in yield at no cost to the future conservation of the soil exists throughout the

country, given the correct mixture of inputs and economic incentives to implement the policy. Faced with the need to maintain the inherent fertility of the soil and so reduce the pressure to cultivate areas incapable of sustaining continual cultivation except with costly measures of conservation, *the emphasis in agricultural policy is on a general rise in agricultural productivity to be achieved quickly and effectively by the most economical means.* Furthermore, the continual extension of subsistence cultivation onto new land or land formerly under cash cropping is prejudicial to the broad development strategy of a rapid and sustained increase in agricultural exports. Thus the twin objectives of self-sufficiency in food staples and the encouragement of agricultural exports are realised in the policy of a rapid rise in agricultural productivity of both food and cash crops.

1.4 This general policy aim encompasses all aspects of agricultural activity, including animal husbandry, fishing and forestry. Policy with respect to the development of individual crops and products must bear in mind its general relationship to this over-all aim. The impact, for example, of livestock on other agricultural activities can be favourable to or in conflict with the aim of raising overall productivity: over-grazing on dambos reduces the dry-season water flows essential to good cultivation, while the planned expansion of animal husbandry integrated with crop cultivation can raise the output of both. For each crop described below an attempt is made to show this inter-relation between crop development and overall agricultural policy.

1.5 The Ministry of Agriculture and Natural Resources is so organised as to give effect to the overall aims of policy through the efforts of its Divisions and Departments concerned with research, extension, technical services and development. These combine to produce a strategy for development in which a broad-based attempt to raise productivity throughout the country by research, extension, conservation and the incentives of better inputs and marketing facilities has been reinforced by a more intensive approach in those crops that now need a comprehensive provision of inputs and advice to overcome production constraints, and on land with major growth potential, where an integrated project can be established. Such projects are given the benefit of higher levels of extension effort and credit facilities to purchase inputs for use in areas which have been planned for development according to best land usage. There are no hard and fast rules governing the project approach. The emphasis varies from project to project, for a scheme which concentrates on the provision of greatly increased extension effort and concomitant services and inputs, such as can be seen in the cotton monoculture at Chikwawa; to full-scale mechanised land clearance prior to the establishment of settlers producing a range of food and cash crops, as at Salima.

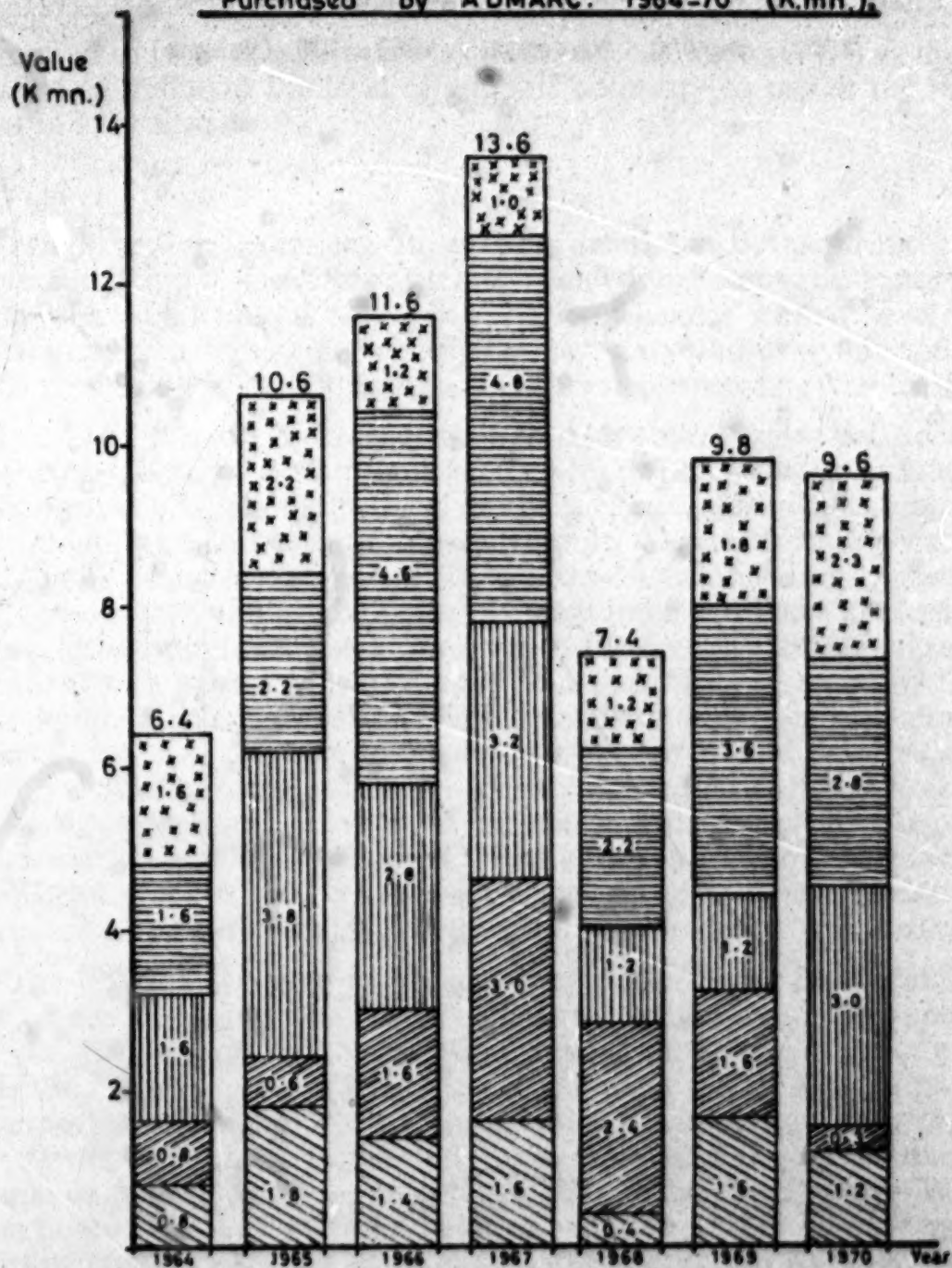
1.6 Each project is viewed as a self-justifying investment in agriculture and planned accordingly to provide balanced farm budgets from which the cultivators will experience a large increase in net incomes and from which the development expenses of the project can be refunded insofar as the cultivators are the direct beneficiaries. Infrastructure investment in the form of roads, market facilities, boreholes and so forth is included within the project investment fund as part of the aim of ensuring optimal conditions for a rapid rise in productivity and farm incomes.

1.7 A large part of the success in implementing this approach to date can be attributed to the policy of the Government in presenting such projects in a form suitable for external financing. Foreign donors provide the major source of investment initially required to establish a project during the first five years or so, as well as technical assistance from the planning stage through the execution of the project, up to the time it has been established as a successful venture.

1.8 The Government's approach has been described as a two-pronged one. Emphasis is given to the preparation of projects for financing, while at the same time Government maintains the provision of basic support facilities for smallholders. It is essential that these are continued at maximum strength if the whole policy is to be successful. There is also close liaison with statutory bodies concerned with the development of agriculture,

Graph III.1

Value to Growers or Traders of Produce
Purchased by ADMARC. 1964-70 (K.mn.)



Key:

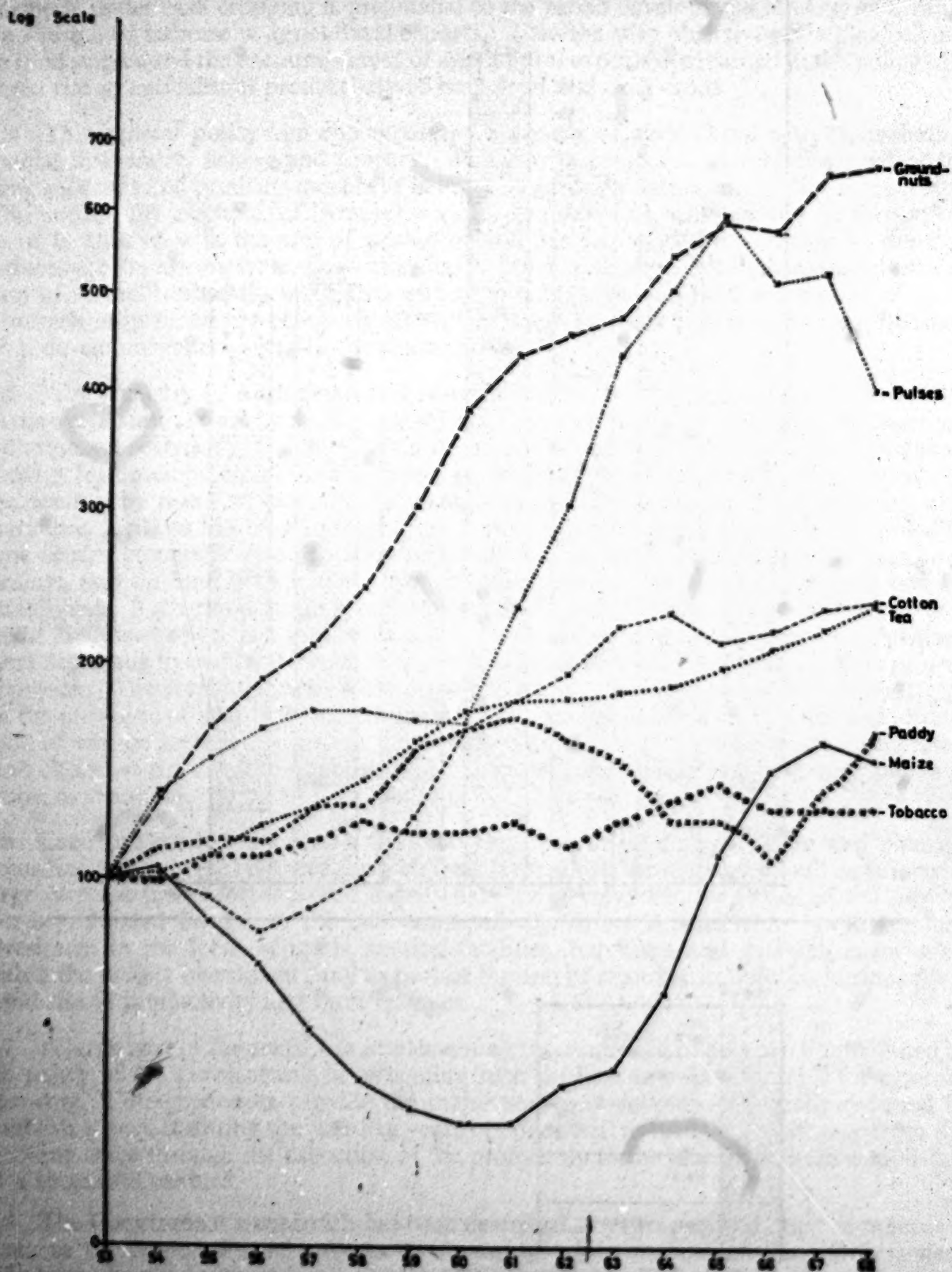
	Seed Cotton
	Groundnuts
	Tobacco
	Maize
	Other Produce

Source: Economic Report, 1971.

GRAPH III. 2

COMPARATIVE GROWTH OF MARKETING AGRICULTURAL PRODUCE 1953-1968

5 Year moving average, 1953 = 100 (Volume)



particularly ADMARC, who have the main responsibility for the marketing and movement of agricultural produce. The importance of the agricultural sector is realised in the priority it receives on claims for funds from Revenue Account with which to maintain these services and on local counterpart costs in Development Account so as to service the projects. Over the decade recurrent expenditure on Agriculture and Natural Resources can be expected to grow at a fast rate (as indicated in Chapter VIII) as the basic services are expanded to maintain the level of support necessary to realise the full potential of investment in agriculture.

2 Crop Policy

The following section examines in greater detail the development programme for Agriculture and Natural Resources as it affects individual crops and sectors. It illustrates the way in which agricultural policy is being implemented at field level to develop the agricultural sector in the manner considered necessary and how this will enable export projections predicted for the next decade as given in the preceding chapter to be fulfilled.

2.1 Maize: The role of maize is central to agricultural policy decisions over the next decade. It is the prime food staple and policy with respect to maize production will affect the development of all other agricultural products as well as having a large influence on the pace of development within the economy as a whole. Most of the 78 per cent of cultivated land estimated to be under maize is monocropped with little fertiliser application. Average yields are consequently low (1,000 lb. or five bags to an acre) and the fertility of the land over a period of cropping declines. As a result, further land less suited to maize cultivation is brought into use, to which is added land opened up to maize by the additions to the farming population. The prospect for the individual farmer of finding suitable land for cash cropping to enable him to respond to the agricultural development programme and ensure its success is thus made increasingly more difficult. The long-term potential of the soil for agricultural activities is reduced and the eventual cost of the measures needed to conserve its fertility increased. Part of the effort to increase exports of agricultural produce at a rate of 9 per cent a year over the decade will therefore have to be directed towards an enhancement of yields and the raising of productivity in maize production.

2.1.2 The options available to Malawi in maize policy are constrained both by the agricultural and nutritional importance of the crop within the country and by the circumstances in which Malawi produces maize in relation to the rest of the world. One of the main difficulties to be resolved over the decade arises out of Malawi hovering between being an exporter and an importer of maize, which situation is unlikely to change over the next ten years. Recent large increases in maize production have been due in the main to an extension of acreage under the crop rather than to increased yields. With a continued increase in population such a trend is liable to prejudice a rapid increase in the production of cash crops necessary for the development of the economy over the decade, since the rate of increase envisaged for cash cropping presumes substantial increases in acreage as well as yields. If Malawi were clearly in the position of being an importer or an exporter of maize, internal pricing policy could effectively be used to encourage more efficient production by tying purchase prices to import or export parity. However, even assuming that *per capita* local consumption of maize does not increase, studies on maize production indicate that the rise in population will mean that Malawi remains only just at the point of selfsufficient for most of the decade. At this point, policy is complicated by the need to pay a sufficiently attractive price to growers to obviate the need for imports, while not producing excessive surpluses which at this price cannot economically be exported.

2.1.3 Because of Malawi's geographical position, the landed cost of imported maize (K60 per ton) is far greater than the net proceeds received on maize exports (K30 per ton). Prices based on export parity may be insufficient to call forth surpluses for sale by traditional farmers who are mainly concerned with producing only their own consumption requirements. This runs the risk of lowering maize reserves to the point at which any shortfall in production requires the importation of maize at prices well above the cost of additional domestic production.

2.1.4 The wide margin between import and export parity not only makes it difficult to export surplus maize profitably, but also far more costly to import maize in a year of shortage than it would have been to supply it internally. Policy has thus been directed to encouraging a surplus above self-sufficiency at a price minimising losses on export, so as to guarantee maize supplies sufficient to avoid imports of maize even in years of bad harvest. It is considered that a surplus of 7 per cent of total production will be sufficient to guarantee food supplies with reasonable certainty at all times. The resulting need to export these surpluses at a loss in all but a poor year of harvest is an insurance premium against a bigger loss to which the economy would otherwise become liable, that of having to import in a bad year.

2.1.5 It is thought that even if purchase prices continue to rise towards import parity, the traditional sector on its own is unlikely to be able to provide surpluses of the order regarded as adequate (110,000 short tons by 1975 rising to 125,000 tons in 1980). If purchase prices did rise in the absence of attempts to reduce costs of production, not only would this act as a disincentive for producers of cash crops, but the advantage to be gained by such a policy of insurance would be offset increasingly by its cost. Higher internal prices for maize would raise the losses through exporting and, by increasing the internal resale price, would decrease the relative cost of imports. Without technological innovations in the sector, any expansion of acreage under traditional farming would bring into use higher-cost or less-productive land and create pressure for an upward revision of purchase prices, which would negate the policy. It is in these circumstances that the priority given to a raising of yields must be judged, achieving this through the provision of inputs of fertiliser and hybrid seed along with better cultivation practices. Given more efficient production through these means, it is conceivable that ADMARC could eventually move to an export-parity price without discouraging maize production—the ultimate ideal solution of Malawi's maize problems.

2.1.6 However, the provision of greatly improved inputs will only prove successful if carefully controlled. The extent of the shortfall in production of maize requirements in the Southern Region and the very limited opportunities for expanding acreage there makes it very impracticable and uneconomic to concentrate solely on the introduction of greater quantities of improved inputs into the present pattern of traditional production. Concentrated extension in areas of good potential with a "package" of inputs designed to maximise the potential of high-yielding maize, combined with scheme and project development, will transform production techniques and develop farmers who are cash-cropping on a regular basis; while general extension will concentrate on realising the potential for improvement within traditional techniques on maintaining the fertility of the soil under subsistence cropping.

2.1.7 The impact of such a policy as it comes into effect over the decade will be seen in a slowing down in the rate of increase of subsistence output and increased monetisation of the traditional sector. There is a limit to this policy beyond which it is not worthwhile to go. As has already been stated, more efficient maize production from schemes would allow a move towards export-parity pricing. Introduced too rapidly, this would imply that scheme production would not only make up any shortfalls in requirements over the decade, but substitute for traditional output to some extent also. But it is unlikely that investment in producing maize through schemes can be justified beyond the extent of filling the gap between subsistence production and necessary surpluses.

2.1.8 Investment in maize has a real cost beyond that of the capital involved. On the one hand, it substitutes monetary production for lower-cost subsistence production consumed by individual farmers, since added to the cost of production of scheme maize one would require additional investment in distributing and marketing facilities. On the other hand, the money so invested has an opportunity cost which one would expect to be higher than the returns to maize-growing in excess of requirements, since the unit value of other cash crops in which investment could be made is usually considerably higher. Thus, when it comes to investment in maize beyond the level needed to fulfil requirements—or, in other

words, maize for export—there is a real economic sacrifice to be made: it is only when investment in maize is on the grounds of import-avoidance that its value to the economy equates with investment in other crops. On this basis, no appreciable impact on purchase prices is likely to be felt through the introduction of scheme production except that of a stabilisation of price levels.

2.1.9 Some pressure on supplies of maize is expected during the forthcoming decade, even with the Lilongwe Project producing about 130,000 tons by 1975, rising to a possible 200,000 tons by 1980. Additional investment in concentrated extension exercises in the Southern Region and in improvements in storage and simple husbandry techniques will be needed. The more quickly yields in maize production can be raised, both on and off schemes, the less will be the pressure of extensions of maize acreage on cash cropping and conservation policy.

2.1.10 Initially, the acreage under maize in the South will have to expand at its existing rate. This is unlikely to affect greatly the production of cash crops envisaged in the export projections, since the acreages under cash cropping in the South are much smaller than in the Centre where the Lilongwe Scheme will ease such pressure. There is no doubt, though, that such an expansion in maize acreage implies a heavy investment in conservation measures during the following decade as and when maize surpluses are plentiful and pricing policy can restrict production to the most suitable land.

2.1.11 In estimates of the likely investment in maize production over the decade no account is taken of investment in conservation. This is one of many factors which could have an appreciable impact on maize projections. Another is the effect rising incomes will have on maize consumption, particularly in urban areas. It is impossible to take account of all such variables in assessing the extent to which maize requirements will be met over the next ten years. To a large degree, unfavourable factors are likely to be cancelled out by potentially favourable trends. Sensitivity analysis taking into account possible extra requirements underlines the importance of fulfilling the production targets for maize over the decade, however, since under-fulfillment will slow both the growth of exports and that of the economy as a whole. Investment in maize alone already budgeted will be of the order of K8 million. Investment in settlement schemes and extension exercises combining maize with other dry-land crops such as groundnuts and tobacco could reach some K12 million over and above that directly for maize.

2.2 Tobacco

2.2.1 Western: Western tobaccos of the sun and fire-cured types are produced by customary-land growers. Production is expected to increase from 26 million lb. in 1970 to 37 million lb. in 1975 and 42 million lb. in 1980, including production for home consumption. The bulk of the crop will continue to be Northern Division Dark-Fired, though Southern Division Fired and Sun/Air will each contribute about 6 million lb. by 1980. Market production of customary land tobacco has been shown to be sensitive to changes in both the ADMARC purchase price and prices for other crops. With favourable market conditions, good prices can be offered to growers to encourage them to reach these targets. Western tobaccos can be grown on a maize and groundnut rotation and are therefore an excellent cash crop both from the view of raising farm incomes and of encouraging effective use of land under cash cropping. The main investments involved consist of the construction of barns, drying and storage facilities, made chiefly by traditional means. Inputs of fertilizer are also required on an extensive basis, plus maintenance of seed nurseries and the establishment of a proper tree-planting programme to provide fuel for fire-curing.

2.2.2 Government policy is to balance production with trade requirements. The main means of doing this is through quota control, combined with price adjustments and the use of bonus incentives where appropriate. With trade requirements in excess of present production, the use of quota control will be restricted to encouraging a greater concentration of production in the hands of good growers who are consistently able to fulfil their

quotas. Steps have been taken through legislation to register all tobacco growers on customary land as producers for domestic consumption, sellers to ADMARC, or both, and to discourage trading on private account. In this way it is hoped to ensure that the maximum amount of tobacco produced reaches the auction floors.

2.2.3 Total tobacco acreage on customary land in 1968/69 was 95,700 (NSSA) of which 82 per cent was in the Central Region. The acreage a family holding can effectively cultivate and cure is small (under two acres in 1969) and the number of growers of this high value crop is in consequence high (48,796 in 1969). Though quota restrictions may have affected the picture slightly, yields are low, 200 lb. to 300 lb. of cured leaf per grower according to type, and a grower's average cash return in recent years, following a series of low purchase prices, has been around K20 per annum. An expansion of Western tobaccos to meet market requirements therefore fulfils the agricultural policy objectives of both raising farm incomes and encouraging cash-cropping without prejudicing to any extent the maintenance of subsistence output.

2.2.4 In an effort to help raise returns and improve the quality of the crop, it is proposed to provide increased supervisory and demonstration staff in tobacco-growing areas, mainly in the Central and Southern Regions, covering all places outside major project areas. Inputs required for tobacco production on customary land are relatively simple compared to those for cotton, so the main emphasis in improving production and encouraging greater output of good quality leaf, apart from good prices and careful grading at the market, is to be found in extension advice. The main investment in tobacco in a project area is at Lilongwe, which produces the bulk of the Northern Division Dark-Fired crop and can readily expand its acreage under tobacco to meet market requirements. It is therefore not envisaged that there will be any serious production constraints in attaining production targets during the decade, given adequate extension staff and favourable prices. A large part of the investment in Western tobaccos will come from the Lilongwe project. Additional direct investment into Western tobaccos, excluding inputs, could be of the order of K1 million.

2.2.5 *Flue-Cured and Burley*: Because of their higher cost of production, these types of tobacco have until recently been grown only on private estates. Recent market conditions have been extremely favourable and a rapid expansion of production has occurred, accompanied by the opening of new estates. Flue-cured production is expected to increase from 10.3 million lb. of cured leaf in 1970 to 17 million lb. in 1975 and 20 million lb. in 1980. Burley production is expected to increase from 12.50 million lb. in 1970 to 17 million lb. in 1975 and 20 million lb. in 1980.

2.2.6 Capital investment in barns and storage facilities is considerably higher than in traditional tobacco growing and the above rate of increase will only be achieved through sustained heavy investment during the decade. With regard to flue-cured tobacco, this will be assisted by Government policy to encourage Malawians to grow flue-cured through the Kasungu Flue-cured Tobacco Scheme. This has developed into a scheme for training Malawian growers in producing higher quality leaf sold directly through the auction floors by the Authority. The present object is to train and settle 120 farmers by the 1975/76 season to grow annually 20 acres of tobacco on 150-200 acre holdings in a four-year rotation. Gross income from tobacco per holding (at 30t per lb. cured leaf) was initially estimated to be K6,600, with an average annual net farm income of K760, considerably above average earnings on the land, but with favourable marketing conditions this has been exceeded in the first few years. There is a six-to-seven year training scheme for each farmer and the total investment in developing the scheme to produce 2.5 million lb. of cured leaf by the end of the decade is estimated at K1.2 million. The success of this scheme has encouraged Government to consider the possibilities of giving further encouragement to Malawians to grow flue-cured and burley, especially in settlement-schemes. It is likely that such schemes will produce substantial amounts of tobacco by 1980 (2-3 million lb. of both flue-cured and Burley) if the targets are achieved.

2.2.7 Private estates will continue to provide the main sources of investment and expansion. Gross output in 1968 in private tobacco growing was K3.4 million and gross fixed capital formation was just under K0.5 million. The expense involved in opening up new estates, which owing to the nature of the crop have to be considerably larger than the acreage under tobacco in any one year, will be high: it is estimated that both gross output and investment will increase over the decade at 10 per cent per annum, as has occurred in recent years. This would give a total investment over the decade in private tobacco growing of about K12 million. The main constraints on achieving such a rapid and sustained expansion are the prospects of finding and opening up sufficient suitable land. This is especially so of burley, where market requirements suggest that the traditional red leaf produced will not command as high a price as the lighter leaf grown on different lands.

2.2.8 It is envisaged that though the private sector will contribute the bulk of investment in increasing the production of flue-cured and Burley leaf, considerable investment in public and customary land on the lines of the Kasungu Scheme and settlement schemes will be needed. Plans are already on hand to produce Burley in the Salima and Namitete settlement schemes. Total investment over the decade is assessed at approximately K14 million.

2.3 Tea

2.3.1 Production of made tea is expected to rise from 39 million lb. in 1970 to 48 million lb. in 1975 and 57 million lb. in 1980. Of this total, around 1 million lb. in 1975 and 4.4 million lb. in 1980 may come from smallholder production and the rest from estates. Within the existing freehold only 4-5,000 acres of bushland are left for development by estates; but with up to 10,000 acres of freehold under forest or tung which may be replanted, there is a possible maximum of 50,000 acres. With regard to smallholder development, nurseries and tea gardens have been established in Thyolo/Mulanje and Nkhata Bay Districts. The Northern development awaits the results of Phase I experimentation (indications are that a full programme will be successfully financed), but the Southern development is entering into a Phase II scheme. At present, smallholder acreage is 645, which will rise to 2,107 under Phase I. Phase II aims at a further acreage of 2,625 by 1975, making a total of 4,732. In the North, an area of 10,000 acres has been reserved for possible future development, of which approximately 3,000 acres are suitable for the cultivation of tea. About 600 acres of this will be in production on present plans by 1975 and total smallholder acreage could rise to 10,000 by 1980. A Smallholder Tea Authority has been established to administer the commercial development of smallholder tea.

2.3.2 Malawi tea has traditionally been managed on an extensive rather than intensive system and the plant material is a very variable collection of crosses between Indian and Chinese sources. Pre-war yields of about 600 lb. of made tea have risen to 1,300-1,500 lb./acre. An improvement in quality rather than yield—which is high—is the main element in policy on the supply side. Improved quality may be expected from the introduction of new clone varieties and greater conservation of catchments and water control.

2.3.3 A comprehensive research programme has been pursued for many years by the Tea Research Foundation. The present theme of research is that of intensification, which must be achieved through improved planting material; higher plant populations; higher fertiliser rates; irrigation; and the use of the most suitable land—which may imply replanting. An investigational programme covering the response of tea to irrigation will be continued before a decision is made on recommending the heavy investments required.

2.3.4 Irrigation can increase the yields of tea produced during the dry season, but has little impact during the wet season, nor can it even out the large flush of tea occurring with the onset of the rains, which hinders the efforts of planters to utilise plant to its maximum capacity and maintain an even quality of made tea during the season. The greater advantage in the use of irrigation and high plant populations is the rapid establishment of good stands and the early production of high yields of tea from clones of improved quality. Thus investment in irrigation facilities and replanting during the decade will largely depend

on future world demand, which will determine whether planters invest in improved tea cultivation.

2.3.5 The domestic market for tea is small and requirements of tea from all sources within Malawi are not expected to exceed 2 million lb. by 1980. Consequently, the course of investment during the decade in tea growing will be largely determined by the success of the export quotas agreement in sustaining world prices and encouraging planters to invest in quality improvement as the chief means of increasing returns. Should this agreement fail, and prices continue to decline, the prospect of any large investment in private tea growing is doubtful.

2.3.6 Investment in the smallholder scheme is to some extent influenced by the proximity of private processing factories which the Authority makes use of. While areas in Thyolo offer the best potential in the South, these are some distance from the nearest plant. In the immediate future it appears that the only area that can be developed for smallholder tea in the Northern Region is the Kawalazi area, which is within a few miles of the only tea factory in the North, at Chombe. Should progress in the smallholders scheme prove satisfactory, an investment of about K2 million could be expected during the decade. A figure for investment in the private sector is more difficult to arrive at, owing to uncertainty regarding the future prospects for tea exports. Taking an estimate based on present trends, a 3 per cent annual increase in gross output (running at K6.8 million in 1968) is assumed, with the maintenance of gross fixed capital formation at 10 per cent of gross output, giving a total investment over the decade of K11 million.

2.4 Groundnuts

2.4.1 In 1968/69, according to the National Sample Survey of Agriculture, total groundnut production was 147,000 short tons, of which 71 per cent was produced in the Central Region. Since FMB purchases were only 40,855 tons, in itself a large surplus, it is evident that groundnuts are an important subsistence crop as well as being a leading cash crop. Projections of sales to ADMARC, including local consumption of 5,000 tons in 1975 and 10,000 tons in 1980, indicate a surplus of 72,000 tons in 1975 rising to 110,000 tons in 1980. While it would appear that such targets would not be beyond the capabilities of present subsistence production, given the assumption of at least constant *per capita* consumption and continued population growth at the rate envisaged over the decade, there are constraints acting on the production potential of traditional farmers which make it necessary to invest directly in groundnut production rather than rely on increased provision of farm inputs and the price mechanism to induce greater supplies.

2.4.2 Yields are low, averaging only 400 lb. per acre of shelled nuts in 1968/69. In addition, only just over 10 per cent of the land under some form of groundnut cropping was pure stand. While there has been a remarkable growth trend of sales during the past two decades (averaging 15 per cent compound per year), in recent years this has slackened owing to a combination of factors. Chief among these would seem to be climatic conditions, limitations on yield and acreage increases within present practices and the constant purchase price over the past four years as compared with other crops, which has reduced the relative value of groundnut cropping from its comparatively high level in earlier years.

2.4.3 The market for groundnuts is a good one, since Malawi produces varieties particularly suitable for the confectionery trade, in which there has been a rapid expansion of demand likely to be sustained through the decade. One striking feature of present production techniques is that ADMARC purchase shelled nuts from their markets. Since shelling of groundnuts occurs at a period in which there are particularly heavy demands on labour in the agricultural sector, this acts as one of the constraints emanating from present practices which affects the supply function.

2.4.4 There are other constraints on the agronomic side. It is considered undesirable practice to have more than one-third of a holding under groundnuts at any one time; ideally, one-quarter would be preferred from a rotational standpoint to obviate the build-up of pests and diseases. Along with the demands on labour of hand-shelling, this sets up

a fairly rigid limitation on the acreage which can be cultivated in subsistence-sector family holdings without the provision of mechanised aids, or the abolition of hand-shelling of nuts. Seed supplies at about K4 per acre for planting in pure stand represent a large slice of total cash income and may be a discouraging factor in attempts to increase production, in view of the risk of losing the crop to an attack of rosette or poor rains.

2.4.5 Yields of groundnuts have tended to fluctuate less than in other crops, but in the Southern Region the low acreage under pure stand, the main factor limiting expansion, may well reflect the incidence of rosette. The development of resistant lines could thus lead to large increases in acreage in the Southern Region; but, with the higher cost of inputs involved, the investment needed is likely to encourage an expansion of production for sale by farmers other than those predominantly in subsistence—i.e. those within project and settlement areas. The same is likely to hold for the Central Region where, until the cause of falling yields can be found, there is limited scope for increases in acreage within the subsistence sector. On the other hand, depletion of phosphate and sulphate nutrients can be countered by greater extension emphasis on the use of balanced fertiliser on maize and tobacco, which is likely to favour the intensive project approach. During the decade the subsistence sector is likely to face increasing pressure from the supply side in its attempts to maintain surplus output, as population increases and the farmer is limited by the availability of labour in the size of his holding and his acreage of groundnuts, while the cost of fertiliser and improved seed rises.

2.4.6 The main varieties at present produced, Mwitunde and Chalimbana, are suited to the highland plateau regions. Development of the Lakeshore and Lower Shire as areas of production will depend on the satisfactory introduction of Mani Pintar, a nut suitable for oil-crushing for the local market; and Malimba, a Gambian-type nut being developed for Karonga and the Lower Shire. The introduction of the Malimba nut will be of particular value in that, being of uniform size, it lends itself easily to machine shelling even for a confectionery market. Since it is able to be marketed in shell, it should overcome the "sore-thumb syndrome" in these areas and facilitate quicker introduction of the crop in projects and speedier marketing of the harvest. With respect to the present varieties, as has been implied above, a suitable decorticator is being considered. This will enable ADMARC to shell their more irregular nuts, without prejudicing the confectionery market demand, and will enable projects to rationalise their harvesting and marketing arrangements. Phase II of the Lilongwe Project is being planned on the assumption that nuts will be bought in shell.

2.4.7 Production estimates for existing and planned projects indicate an aggregate marketed surplus of 20,000 tons of groundnuts by 1975 and 35,000 tons by 1980. For reasons stated above, production from the subsistence sector is not expected to rise rapidly and an output of marketed nuts of 45,000 tons in 1975 rising to 50,000 in 1980 is envisaged. This leaves approximately 7,000 tons in 1975 and 25,000 tons in 1980 to be met from investment of a scheme nature. It has already been suggested that further investment in maize will be required and it can be anticipated that schemes will start growing burley and flue-cured tobaccos during the decade. Groundnuts are a cash crop which will complement such developments and a combined figure of K20 million is suggested for investments in maize, groundnuts and tobacco rotations. In addition one would expect that the project envisaged for the Lower Shire could contribute towards the several thousand tons of oil-crushers which will be used by the end of the decade for the home market.

2.5 Cotton

2.5.1 Production of seed cotton will rise from its present level of around 23,500 tons to 42,000 tons in 1975 and 63,000 tons in 1980. With the domestic market expanding to 3,500 tons of lint by 1975 and 5,000 tons by 1980, total production of lint will be 14,000 tons in 1975 and 21,000 tons in 1980. Though the constraints on cotton production differ from one area to another, pest control through spraying is important throughout and results in very large increases in yields.

2.5.2 Total acreage in 1968/69 was 90,900, 85 per cent of which was in the Southern Region (NSSA). The main area of production lies in the Lower Shire, where cotton monoculture is successfully practised with the help of the International Development Association (IDA) cotton scheme and the British cotton extension scheme. Although cotton is the only cash crop in most of the Lower Shire, it is also a good rotational crop that can be grown frequently in rotation on the same piece of land, in marked contrast to groundnuts. Thus in many areas of the country cotton/groundnut rotations are amongst the most profitable systems of crop production. Cotton figures as an important rotation crop in the proposed Karonga Scheme and as the main cash crop in the Central Lakeshore Scheme, where the soils are such as to necessitate some form of rotation.

2.5.3 Malawi produces a variety of cotton, Albar 637, with a strong medium-to-long staple suiting modern spinning methods, but with a fairly low ginning percentage. Deltapine, a variety noted for higher yields and ginning percentage, but of a weaker staple, is being considered for introduction on the basis of home demand since it responds better to irrigation and gives higher returns under these conditions. Inputs, in the form of insecticides and sprayers, are expensive and the steady expansion in output envisaged over the decade will be concentrated on the improved yields of cotton-spraying farmers, who will have to maintain yields in excess of 1,000 lb. per acre to attain a reasonable net income. Non-spraying farmers are highly vulnerable to insect attack on their cotton and show a tendency to cyclical production; a good crop building up pest attacks and causing drastic falls in yield over the next two seasons. With a continuance of the rapid increase in the amount of cotton produced for sale that is sprayed, such a cycle will become much less marked.

2.5.4 There is little production which is not sold through ADMARC. Over the decade the main increase in output will come from the Chikwawa (Kasinthula and Ngabu) and Salima project areas. Non-scheme production should also show a fast rate of increase, provided adequate inputs are made available through the extension services, as growers realise that investment in sprayers is the only means of raising yields and maintaining output at a level high enough to absorb the cost of additional inputs. To this end, the British cotton project which encourages the development of cotton growing in suitable areas not catered for by the major development schemes by providing demonstration staff and supporting services, roads and boreholes, will play a valuable role. Present investments in Chikwawa, Salima and through the British project, of the order of K10 million during the decade, plus the growth of cotton as a rotation crop in further Lakeshore development schemes, should enable the output targets during the decade to be attained.

2.6 Rice

2.6.1 It is envisaged that the marketed production of paddy rice will be expanded from its present level of 11,000 tons per annum to 120,000 tons in 1980. In practice, some of this is likely to take the form of new crops still under development (see Chapter II, para. 6.6.3). Such a rapid increase implies a substantial investment in inputs. The greater majority of rice by 1980 will be paddy grown on land either planned on controlled drainage lines suitable for single-cropping, or on fully constructed irrigation schemes, suitable for double-cropping. Present rainfed production is expected to contribute only marginally to the overall increase.

2.6.2 Rice has been grown in Malawi as a subsistence crop of secondary importance, with imports meeting the requirements of the small high-quality market. Present plans for the expansion of rice have the export market at their prime goal. Domestic demand from all sources is not expected to exceed 10,000 tons by 1980. The introduction of high-yielding *indica* varieties suitable for export has been made possible through the use of new techniques of cultivation. A reduction of the former major bottleneck of labour requirements for weeding is brought about where full or partial water control is introduced. As the first step in such a move, small irrigated settlement schemes are being established at the rate of 1,000 acres per year with double-cropping of rice as the main enterprise. By concentrating strictly on essentials, costs have been kept to a minimum.

2.6.3 The main impetus in attaining the above targets will come from major projects based on experience gained from these irrigated settlements. Areas where there is the possibility of developing major irrigated projects with rice as the basic crop have been evaluated in all three Regions. Along with a comprehensive evaluation of the potential of the Lower Shire Valley, a United Nations Development Programme/Food and Agricultural Organisation team has drawn up plans for the development of 30,000 acres of irrigated land at Kasinthula in Chikwawa District to be fed by gravity canal. The British Government under Technical Assistance has carried out topographical and soil surveys with a view to identifying an area of 20,000 acres for eventual irrigated development in Nkhota-kota District. The Government has presented for consideration a project to develop irrigated rice in Karonga and the Central Lakeshore Development based on Salima will include in Phase II plans to develop irrigated rice. All these schemes, or their equivalent, will require to be successfully financed and put into action during the decade for the output targets to be attained.

2.6.4 The key to the development of rice over the next ten years lies in the successful development of export markets and in the introduction of efficient production methods at economically feasible costs, along with comprehensive marketing and milling facilities. A milling and storage complex is being planned for Liwonde to handle paddy brought from Lakeshore developments and further storage and milling facilities are being introduced at or near the main areas of production.

2.6.5 There are no firm figures of total acreage under rice, though according to NSSA the acreage under some form of rice cultivation in 1968/69 was 119,300 of which 80 per cent was in the Southern Region. This would indicate a fairly substantial production for home consumption. The main indigenous variety of *indica* rice, Faya, has some export potential but is unsuitable for double-cropping. The American varieties introduced for double-cropping need careful cultivation and irrigation to realise their high yields. Present farm gate prices cannot be raised without prejudicing export prospects. It is therefore not envisaged that rainfed production will contribute more than marginally to the increased production estimated for the decade.

2.6.6 Faya can be grown on a single-cropping low-cost controlled drainage basis which is being developed by the Technical Services Branch. The rate of expansion at present envisaged would result in a marketed production of irrigated paddy of 26,800 tons in 1975, rising to 98,000 tons in 1980, with the balance from rainfed production. Investigation into the potential for development of other irrigable crops is under way and the total acreage under irrigation by the end of the decade will depend on the success of such research.

2.6.7 The costs of investment in fully irrigated schemes have been estimated in Karonga at approximately K300 per acre, including settlement costs and overheads. Taking these costs as typical and using an estimate of K40 per acre for simple controlled drainage schemes, total capital costs of investment into irrigated rice during the decade are estimated at K6-8 million. Investment in marketing, storage and transport facilities will further increase this estimate, so that an overall figure of the order of K16 million would be reasonable as an assessment of total investment in rice-based projects for the decade, though the actual amount of investment in irrigation will depend largely on the development of export markets for rice and for other potentially irrigable crops.

2.7 Other Crops

2.7.1 Cassava. In 1968/69 the National Sample Survey of Agriculture indicated a total acreage under cassava of 737,900. Cassava is second in importance only to maize as a food crop, yields a higher number of calories per acre and is of particular value as a famine reserve, since the root can be left in the ground a considerable period of time before harvesting. Though high-yielding in poor soils, and thus especially suited to parts of the Lakeshore and other areas not ideal for intensive maize production, its food value is poor (except where the cassava leaves are included in the diet) and there are no plans to expand production. Arrangements have been made to rationalise the buying of surplus cassava

root and it may be necessary to install an efficient chipping plant in order to maintain the market in Europe where chipped cassava is used as the fattening agent in compound animal feeds.

2.7.2 Since the crop is used as a standby for the failure of other staples, except in certain Lakeshore areas, the trade in cassava is subject to large fluctuations. The crop has a low value-weight ratio and is not an attractive cash alternative for farmers. Provided, however, that maize surpluses are maintained at an adequate level, there should be little difficulty in exporting 40,000 tons in 1975, rising to 50,000 tons in 1980, and no extra investment in the crop is visualised.

2.7.3 Pulses. The term "pulses" is used to denote the wide range of beans and peas that are bought by ADMARC. Total acreage under pulses was 2,078,500 in 1968/69 (NSSA), second only to maize, but only 1 per cent of this was under pure stand, pulses being the main element in mixed cropping regimes. Such mixed cropping has little effect on maize but a large one on pulse yields. The pulses presently produced in Malawi are generally of mixed varieties and have a low value on world markets. Pulses are vital as a source of protein in the diet, where animal protein is largely deficient. While steps are being taken to introduce more commercial varieties, their main value for the next decade at least will be as a rotational crop important in subsistence cultivation and as a source of additional nutritives and standby foods. Marketed production is only a small percentage of total production and sales reflect the general food situation within the country. Provided that policy with respect to the major crops is satisfactorily implemented, there should be no difficulty in meeting export targets without additional investment, though the extension services will have to bear the cost of introducing more economic varieties through a "seed-flushing" programme, finding for each ecological area a variety which will be both economically viable and an acceptable replacement rotationally and nutritionally for the present types of seeds.

2.7.4 Sunflower Seed. There is a small but growing trade in sunflower seed for oil-expression, for which ADMARC has assumed responsibility. Existing resources should prove adequate to meet the demands of the home market and the export trade during the decade, given adequate extension advice.

2.7.5 Wheat. Malawi's requirements of wheat and wheat flour are almost entirely imported. A small quantity of wheat (around 700 tons) is produced yearly in the Higher Kirk Range. This is usually of poor baking quality and the bulk of it is used in stockfeed, though some is used as a filler blended with imported hard wheats. Agronomic trials of more suitable strains proceed. Investigation into irrigated winter wheat may encourage its introduction as an irrigated crop.

2.7.6 Coffee. The growing and processing of coffee has recently been re-organised. A Coffee Authority is in the process of being established, which will be responsible for supervising the growing of coffee in the Northern Region, the main area of customary land production. Initially financed by a subvention from the Government, the Authority will act as purchaser of beans and eventually manage the pulperies along fully commercial lines.

2.7.7 The main areas best suited for the production of coffee are in the highlands of the Northern Region, for which no other cash crop has been found suitable, though there is a private estate in the South. The domestic market for fresh coffee is small and likely to remain so. The small export trade will expand slowly during the decade as the British coffee development project raises production through the rationalisation of effort provided by the establishment of an authority concerned with improving the crop. Total expenditure on coffee development by the Government is not expected to exceed K0.2 million during the decade.

2.7.8 Horticulture. Market requirements for the wide range of horticultural products are varied. While there is a need to encourage consumption of green vegetables in the villages and to alleviate seasonal fluctuations in urban supplies which are reflected in imports of fresh produce, the export market requirements are highly specialised and limited

to a few high-value products whose cultivation must be carefully supervised to meet the high-quality control standards demanded. Increased local demand for marketed horticultural products will be met internally through extension and marketing efforts aimed at sustaining regular supplies of products such as potatoes, onions and tomatoes. Better storage and transportation of local produce and the introduction of higher-yielding and more resistant varieties should curtail imports of these products and ease market price fluctuations without necessitating significant Government investment.

2.7.9 It is anticipated that the export of horticultural products will be gradually developed over the decade on the basis of nucleus estates in conjunction with outgrowers. A well-established home market is essential to such developments to absorb all but the best quality produce. ADMARC is establishing such a unit in Thyolo at Makande and there is already a private canning plant in operation at Luchenza providing a market for pineapples and grapefruit. Investigations into more specialised produce for export are under way, and future developments await satisfactory trials and marketing tests. Depending on these results, investments in horticultural development could become of some significance by the end of the decade, though indications of the likely amount of investment involved cannot at this stage be made. Particular attention is being given to the development of nut crops and the production of onions and tomatoes for soup essences.

2.7.10 Sugar. Malawi's sugar requirements are produced from an irrigated estate in the Lower Shire, financed by private investment. Production of refined sugar has risen rapidly since 1966 and in 1969 was 30,000 tons, produced off 5,550 acres. It is thought that the estate is capable of meeting an internal demand rising annually by 3,000 tons to the end of the decade within its present acreage, though this will involve extra investment in plant. Further expansion plans are geared to the export market, which at the present time takes only a small portion of total output (2,500 tons in 1969). Given favourable export prospects, total production at the end of the decade could reach 70-80,000 tons, which would necessitate an investment in land and plant of about K5 million somewhat less than the initial investment.

2.7.11 Tung Oil. The 1970's will see tung oil production maintained only as an ancillary to other production on estates, where costs of production can be kept low by using estate labour to harvest the crop as a by-product of normal activities. Independent tung estates are being run down and the capacity to expand production in response to any trend towards higher prices will be small by 1980. Output of oil is not expected to exceed its present level of around 1,000 long tons a year.

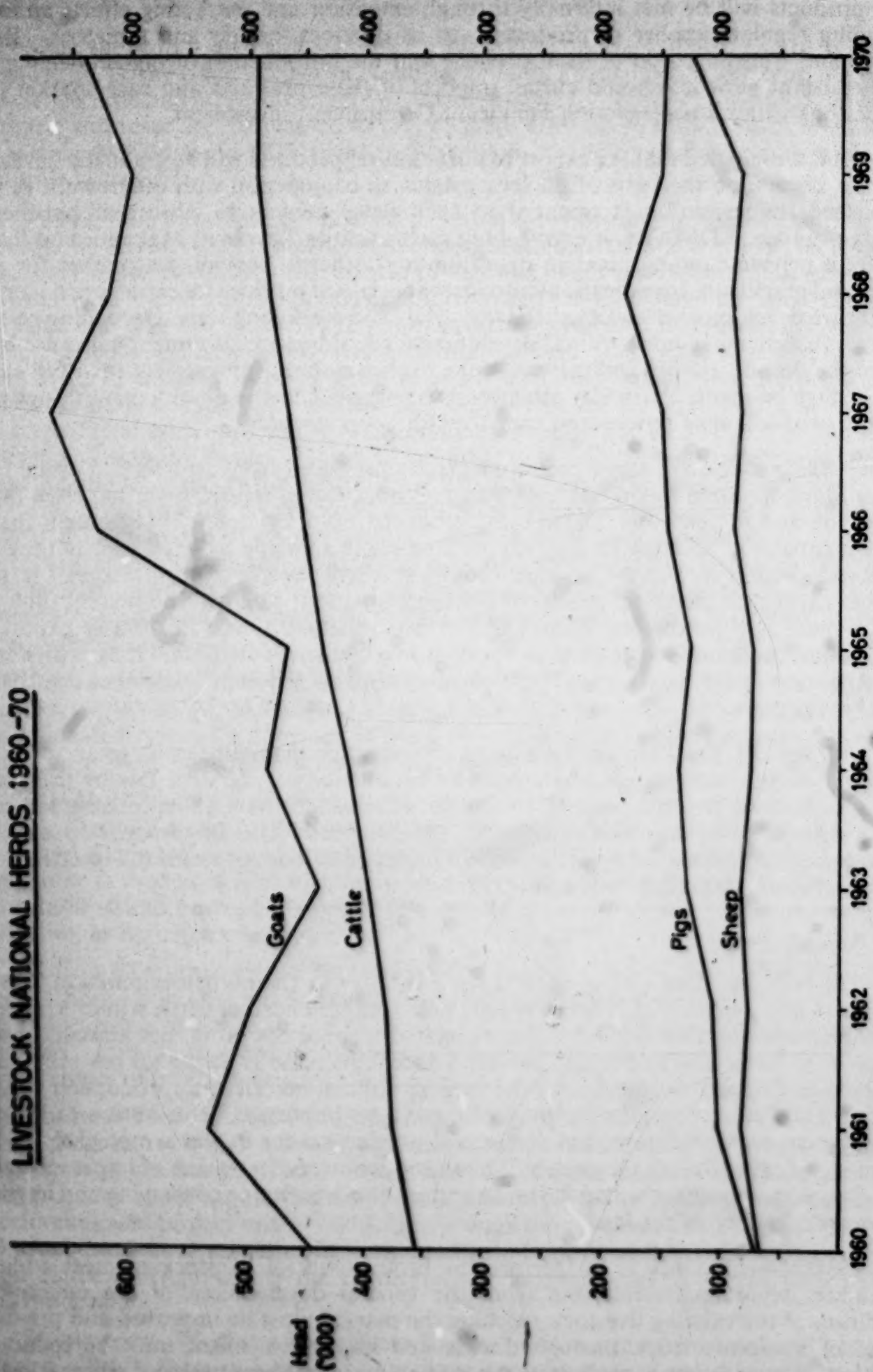
3 Livestock Policy

3.1 The national herd of livestock is small relative to the human population, but high relative to non-arable land. There are only half-a-million head of cattle within Malawi and *per capita* consumption of all meat is estimated to be about 10 lb. per annum, of which about 3½ lb. is beef. The average annual livestock increase is about 3.5 per cent, slightly higher than the rate of increase of the human population. Greater production to satisfy existing and future domestic demand can make an important contribution to economic development within Malawi, but specialised production for export is not likely to be of major significance during the decade. The introduction and extension of improved systems of livestock management will make an important contribution to conserving and improving the overall fertility of the land.

3.2 Government policy is to increase the productivity of livestock to meet additional consumer requirements resulting from the general development of the country. The condition of the existing livestock reaching the market must be improved and pre-market losses of immature stock through disease and bad management must be reduced. In addition, inherently more productive types of animal must be introduced where conditions permit their potential to be economically exploited. A major requirement in attaining this policy is to produce a more favourable ratio between human and livestock populations by

GRAPH III. 3

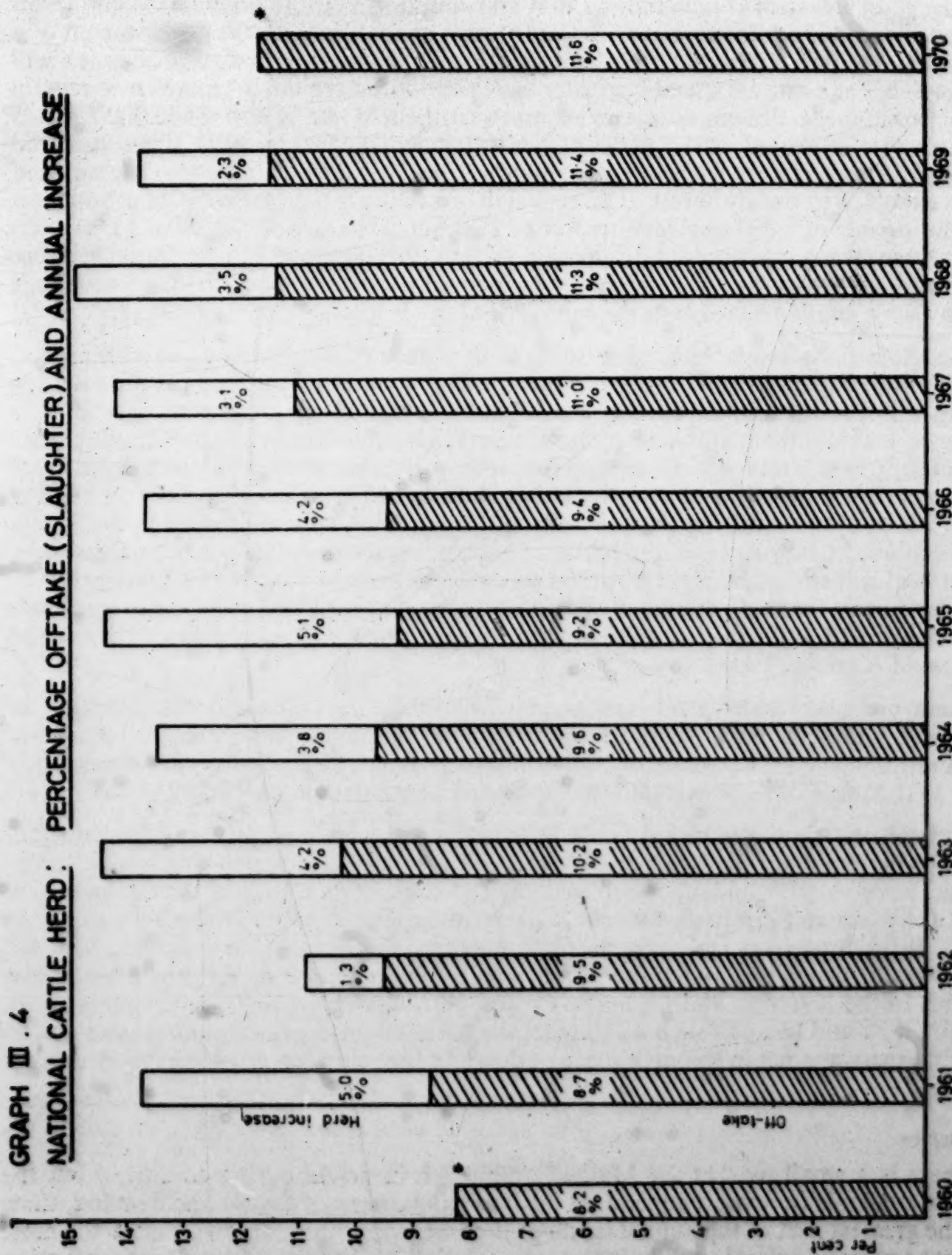
LIVESTOCK NATIONAL HERDS 1960-70



Source: Dept't of Veterinary Services, Annual Livestock Censuses.

GRAPH III . 4

NATIONAL CATTLE HERD : PERCENTAGE OFFTAKE (SLAUGHTER) AND ANNUAL INCREASE



Source: Department of Veterinary Services (♦ herd increase was negligible in 1960 and 1970, according to annual Livestock Censuses).

equating the carrying capacity of the land with its stock and to integrate the stock into arable areas by the greater use of crop residues.

3.3 With the development of a commercial marketing system set up through the Cold Storage Company, it has proved possible to attain virtual self-sufficiency in meat consumption since 1966. However, though cattle prices rose substantially during the decade, there is still evidence of unsatisfied demand, so that consumption even at existing income levels could be increased if additional supplies were readily available. With the development of a more efficient retail distributive system and a steady rise in incomes, annual production will have to increase at a rate appreciably greater than population growth if Malawi is to remain self-sufficient in meat. Present estimates suggest a cattle herd size of about 640,000 by 1975 rising, at a rate of growth of 4.5 per cent per annum, to 785,000 by 1980. It is considered that the percentage offtake will rise only slightly from 10.4, but the average carcass dead weight is expected to rise by about 17 lb. to 305 lb., resulting in a growth of beef production during the decade of 5,800 tons (an increase of 75 per cent) to give an output of 13,600 tons by 1980. After taking into account population growth, this implies a 1 lb. per caput increase in beef supplies, which may be adequate to maintain self-sufficiency in meat products, provided that a similar increase in the numbers of other livestock is maintained.

3.4 The projections available emphasise the importance of the North as an area of surplus beef production available for export to other regions. In line with the strategy for achieving this production, of raising feeder stock under range management and then fattening on residues from arable farming, the development of intensive stall-feeding units in the South, where land for stock raising is scarce, will be supplied with cattle from areas where livestock are raised in the North. This will also relieve pressure on existing holding grounds, which are proving inadequate to meet the growing demand for beef in the South. The Cold Storage Company is in the process of extending its abattoir facilities northwards, but most beef will still be brought down on the hoof, at least to Salima and Lilongwe. The stall-feeder system for beef production is further being supplemented by plans to introduce a livestock element in Phase II of the Lilongwe Project, the Central Lakeshore Project and the proposed Karonga Project.

3.5 There are plans to expand commercial milk-plant capacity and consumption of liquid whole and skim milk. Investments to provide the main urban areas of Blantyre/Limbe and Lilongwe with pasteurised milk are in hand and, if successfully implemented, it is likely that Malawi will be virtually self-sufficient in whole milk by 1980.

3.6 With respect to the national herds of goat, sheep, pigs and poultry, the principal object is to maintain and improve quality and quantity and to build up production on an economic basis to gain and maintain general self-sufficiency during a decade in which demand for meat and poultry products is likely to expand rapidly. Direct investment in livestock through projects including the British extension grant will amount to about K2 million over the decade, of which the largest single components will comprise investments in ranches in the Karonga and Lilongwe Projects. Provided that these investments prove successful, it should be possible both to meet the national production requirements and to ensure that these are met in the right place at the right time through an efficient distribution system.

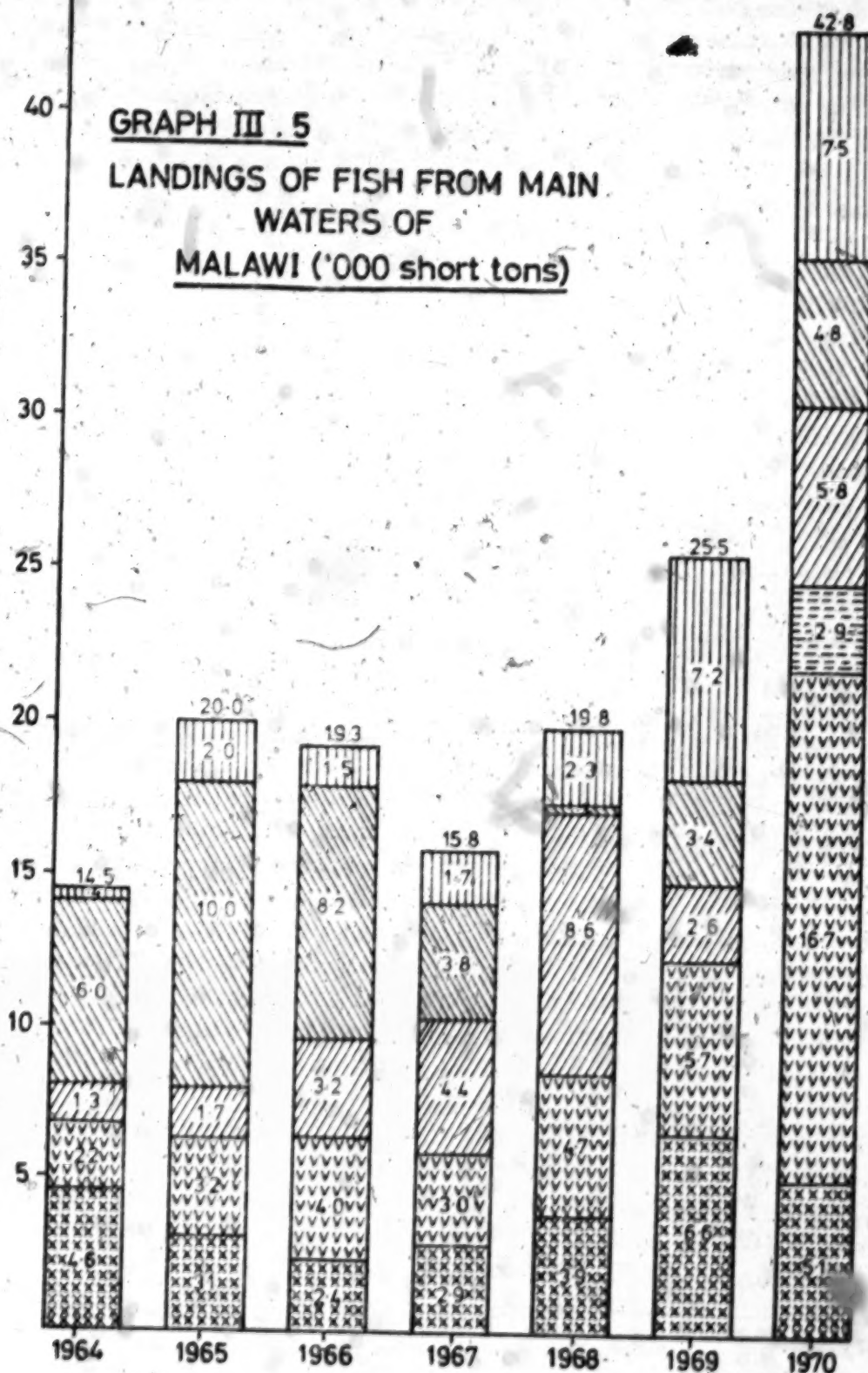
4 Fisheries

4.1 There is a small market for Malawi's table fish in neighbouring countries, but the quantities available for export depend on the internal patterns of supply and demand, since by far the greatest part of the annual landings is consumed within Malawi. Fish is the most important source of animal protein in the national diet, the average *per capita* consumption of 10 lb. per annum of fish being almost three times that of beef. Recorded fish exports have increased rapidly over the past few years, giving Malawi a net export surplus of fish in terms of the value of the trade. Apart from a small market for chambo (*tilapia* spp.), the increase is due entirely to the introduction of trawl net fishing in 1968. This fishery has landed relatively large quantities of a previously unexploited fish (*chisawasawa*) surplus to

Thousand
short
tons

GRAPH III. 5

LANDINGS OF FISH FROM MAIN WATERS OF MALAWI ('000 short tons)



KEY

-  Lower Shire
-  Lake Chilwa and Lake Chiuta
-  Lake Malombe
-  Upper Shire
-  S.E. Arm (LAKE MALAWI)
-  Lake Malawi-Other

Source: Data from Fisheries Department

immediate local demand, which is marketed fresh to Rhodesia through a Government-backed commercial fishery and dried, by the traditional trade, for sale to Rhodesia and Zambia. Fish prices on the internal market rose in 1967 with the cessation of landings from Chilwa, but have remained fairly static since then. The market is sensitive to changes in supply and it is expected that the increases in landings of chisawasawa over the next few years will help keep prices stable in spite of increased demand. Some growth in exports over the decade from the traditional trade can therefore be envisaged up to the time the stock becomes fully exploited. A further apparent increase from greater recording of exports is also likely.

4.2 The main problem in achieving expansion in production lies in maintaining the landings from those elements of the fishery already fully exploited, while developing others. There are three main constraints on production, "over-fishing", natural hazards, and competition for the use of water. Government regulation of the quality and quantity of fishing is essential if over fishing is to be avoided in a developed fishery. As a matter of principle, the long-term level of landings per annum of an enclosed area is fixed. Estimates of increases during the decade are based on the likely development of stocks known to exist by methods already existing. These indicate a level of about 40,000 short tons annually by 1980 compared to present landings of 26,000 tons, assuming that present survey techniques accurately estimate landings from all main fisheries. There could be once-for-all increases in this level should new methods of catching previously unexploited stocks be initiated. However, once natural fisheries are fully developed, any increases will have to come from fish-farming.

4.3 Lake Malawi itself, except in its southern arms, does not provide ideal fishing grounds, since the majority of its waters are too deep to sustain heavy fish populations. Catches from Lake Chilwa and the Lower Shire are of equal importance, and the major hazard to the prospect of increased landings over the next decade is that Lake Chilwa should again dry up. Now that they are more fully exploited, it is unlikely that other fisheries will be able to compensate for such a drop in production in the way achieved in 1968. There is also a possible threat to fisheries posed by the irrigation schemes for Lake Chilwa and the Lower Shire Valley and the Tedzani Falls hydro-electric project. To counter this, there is the prospect of developing some form of fish-farming in the Lower Shire utilising irrigation channels which could, if successful, be extended to other suitable schemes.

4.4 Any contribution that fisheries will make in substituting home production for imports will be not so much in terms of increased output but in more extensive and better processing of local catches. Village stores sell appreciable quantities of tinned and packeted fish products which are mainly of imported origin, but a small canning factory has recently opened at Salima.

5 Forestry

5.1 The policy of the Government is to place equal emphasis on the conservation of catchment areas and on the production of timber and wood products in its assessment of the potential of Malawi's forest resources. A major constraint on increasing production of wood and wood products is therefore that of maintaining an ecological balance favourable to the continued exploitation of cultivable land. Output of construction grade timber from private estates is negligible. Although there has been a large increase in the volume of all types of sawn timber produced and sold in the domestic market, Malawi is still a substantial net importer of wood and wood products. (Imports of sawn timber in 1969 were valued at K400,870 and of all articles of wood at K1,155,282). Overall consumption has risen mainly because of increased activity in the building trade; lack of plantings in the 1940s and 1950s has hindered the efforts of the Department to meet this. To meet increased consumption of wood from local resources, there is a timber plantation project; to meet that of pulp and paper, there is the Vipya Pulpwood Plantations Project.

A sawmilling project furthers the expansion of sawmilling and logging operations, which process timber from the plantations as well as some timber from private and customary-land sources.

5.2 With the sharp rise in the price of imported timber and given Malawi's favourable growing conditions, the policy has been accepted of making the country self-sufficient in construction grade timber. It is estimated that this will require the creation of 46,000 acres of timber plantations by 2000. In 1970 the total acreage of softwood timber plantations under the control of the Department was 34,000, leaving 12,000 acres to be established over the next thirty years. It is estimated that total log input will rise from 1.25 million cubic feet in 1970 to 2.4 million cubic feet in 1980 and 4.75 million cubic feet in 1990, giving a total sawn output rising from 0.425 million cubic feet in 1970 to 0.9 million cubic feet in 1980 and about 2-2.5 million cubic feet by 1990. These timber requirement forecasts are derived from an estimate of Malawi's domestic requirements; but since it has already been proved that Malawi construction grade timber is competitive in export markets in neighbouring countries, there should be little difficulty in exporting any surpluses. It has also been suggested that the Vipya Pulpwood Project, set up with the idea of establishing a pulp/paper mill, should include an integrated sawmill with the capacity to export sawn timber or plywood to neighbouring countries. The prospect of such exports will depend on further investigations.

5.3 The Vipya Pulpwood Project provides for the eventual establishment of an integrated pulp/paper mill requiring 69,000 acres of plantation, of which 54,000 acres are softwood. The softwood programme of planting has been completed and planting of hardwood will continue at a rate of 1,000 acres per annum. Depending on the outcome of the technical feasibility study, the mill should be in operation by the second half of the decade.

5.4 Despite the rapid growth of the national economy envisaged, investment in plantations during the decade should be sufficient to allow a gradual reduction in imports of wood. Imports of packaging materials and paper will not be greatly affected by the production of kraft pulp/paper before 1980. Timber plantations are expensive investments to set up and the amount of Government money already spent on both main projects is about K3.4 million. Further expenditure over the decade is estimated at K3 million, excluding investment in any processing plant and any private investment. However, total annual sales are expected to increase rapidly during this period from K578,000 in 1970 to K1 million in 1975 and K1.1 million in 1980, eventually reaching about K3 million per annum by 1990, should present developments prove successful. The economic benefits of this import-substitution are to be seen also in furthering the policy of conserving land not suitable for cultivation and in providing an economic alternative use for such land.

6 Development Policy

6.1 The present policy has developed along four main lines:

- (a) The basic links between the Government and the farmer;
- (b) Concentrated extension in the more productive areas;
- (c) A rapid development of underutilised resources on a limited scale in areas available for settlement and the introduction of new inputs, either dry-land or irrigated;
- (d) The all-embracing project, with high levels of inputs and large-scale investment in infrastructure.

6.2 This range of development assistance enables Government to encourage the most promising farmers to raise their income levels to a point where they are able to take best advantage of improved inputs and become fully commercial farmers, while spreading the benefits of better techniques and inputs over as wide an area as is feasible, with a view to encouraging the most rapid increases in production for the market. With the incorporation of the Achikumbe (progressive farmers) and Young Pioneer Programmes in agricultural development, the extension and development services are being tailored increasingly

to provide a more comprehensive service to assist rural development, moving away from the present need to provide service to largely non-commercial communities, even though some potential for increased production from a small extension effort still exists.

6.3 To this end the establishment of settlement schemes throughout the country will provide the opportunity to introduce new methods of cultivation and develop new crops in an environment conducive to good cultivation. These developments involve the provision of plots of land with access to water, extension advice, credit and initial supervision and assistance with cropping and marketing. They have an impact both on the existing agricultural activities of an area and its social structure: hence their development involves the work of several ministries and organisations. Settlers are given the opportunity to gain substantial increases in farm incomes and the principle has been established that beneficiaries are liable for development charges to offset the capital costs of schemes and make some contribution to their running costs.

6.4 Of particular relevance to the development of settlement schemes is the introduction of irrigation and water-control, which is both impractical and uneconomic on a piece-meal basis. Irrigated settlement schemes are being started in areas of good irrigable potential with a view to more extensive application should the results prove favourable from the technical and economic aspects. The success of such schemes will thereby be a means of assessing the total potential for irrigation within Malawi and the capacity of the economy to absorb investment in major projects, based on water control and irrigated double cropping. A major factor governing investment in irrigation will be the extent to which export markets can be developed for the major irrigated crop at present—rice—and the success of attempts to diversify into higher value irrigable crops for export.

6.5 This gradual change of emphasis from subsistence to cash-cropping will focus attention on the all-embracing nature of extension advice required. Not only will there be need for a "package" of agricultural inputs to encourage the adoption of improved seed and better techniques, so that the full potential of these innovations is realised; but the provision of social services, health facilities and consumer goods will also be required as an integral part of encouraging the efficient commercialisation of agriculture. For effective planning of the development effort, attention will increasingly come to be paid to the physical aspects of planning such investments, to ensure that provision of non-agricultural facilities is most efficiently made, having regard to the existing social infrastructure. The network of existing and planned transport facilities will be a major factor influencing agricultural policy in this respect. Care is being taken to ensure that areas of increased production are chosen *inter alia* with a view to minimising transport costs and assessing the ability of agricultural products to sustain widely differing freight costs.

6.6 It will be clear from the above discussion that Malawi's success in achieving the output and export projections in this and the previous chapter will largely depend on the responsiveness of smallholder farmers. This in turn will be directly affected by the pricing policies followed by ADMARC, through which all smallholder crops are channelled. In recognition of this the Malawi Government has laid down general principles governing pricing policy.

6.6.1 In order to promote a rapid rate of agricultural development, in general producers should be paid as high a price for each crop as possible, taking one year with another, without incurring subsidy. For export crops the policy of export-parity pricing should be maintained. For food crops, primarily maize, it may be necessary to pay a price slightly above export-parity to elicit adequate supplies. Any losses incurred in purchasing and storing maize surpluses, while strictly a national cost in terms of ensuring its food supplies, should in practice be met by producers, who constitute most of the beneficiaries of the policy of safe-guarding national food supplies.

6.6.2 An objective of pricing policy should be to ensure a reasonable level of price stability for each crop from one season to the next. To this end the marketing organisation should have at its disposal a single price reserve fund equal after a normal season to an

agreed proportion of its gross turnover (sales realisation). The diversity of Malawi's agricultural production means that price stabilisation for individual crops can be consistent with farm income stabilisation in the aggregate; however, it may sometime be necessary to take measures to cushion growers of particular crops or in particular areas against the income effects of exceptionally adverse conditions. A legitimate use of the price reserve fund will be to offer an incentive price to stimulate production of a crop where a profitable future market is foreseen that will permit the recovery of such an initial incentive. Over the long term prices paid to producers must follow trends in world market prices, taking into account any changes in costs in delivering produce to the buyer.

6.6.3 Recognising the central role played by small farmers in the development of Malawi's economy, one of the objectives of pricing policy is to avoid incurring net transfers of resources from smallholder agriculture to other sectors of the economy. For the foreseeable future the marketing organisation will have to follow a policy of uniform prices for crops (and for farm inputs) throughout the country, in view of the importance of social equity and regional balance; it is accepted that this implies a small degree of subsidy of producers in the more remote areas by those more favourably located. A corollary of this policy, however, is that in practice the marketing organisation must be allowed to retain some freedom of manoeuvre in the method of purchase of low-value crops it is prepared to buy in areas of exceptionally high transport cost. In such areas, so far as possible maize purchases should be retained in store for local resale.

6.6.4 Calculation of producer prices should take into account not only the current costs of marketing, moving, storing and selling crops, but also all associated capital costs involved in the provision of such services, including necessary research and sales promotion. In this context the marketing organisation should be permitted (and encouraged) to prepare a long-term programme of necessary capital investment with assured loan finance, to be repaid out of annual surpluses to the reserve fund as they arise. Pricing policy will thus make allowance for the servicing of the required finance. Pricing policy for crops must be considered also in relation to pricing of farm inputs (and cost of credit): it may sometimes appear desirable to reduce the cost of an input, or offer cheap credit, in exchange for a reduction in the average price paid to producers. The policy of making a second payment at the end of the season to registered tobacco growers should continue, but there are practical difficulties in extending this to other crops. Minimum guaranteed prices for the coming season should be announced as early as possible, and preferably before time of planting.

7 Financial Implications

7.1 Table III.1 summarises the various output projections and investment estimates given in the preceding sections. By their nature such estimates can give only a guide to the general lines of development over the decade and are subject to amendment as the prospects for individual crops change. Total direct investment in Agriculture and Natural Resources (excluding minerals and mining) is estimated at K83.2 million over the decade. This figure makes no allowance for the level of inputs required to realise these production targets, or the recurrent expenditure overheads financed from funds under Development Account at the present time. Of this total about K22 million can be ascribed to private investment in tea (K9 million), sugar (K5 million) and tobacco (K8 million out of an estimated total investment in flue-cured and burley of K14 million). This leaves a total of K61.2 million to be financed by the public sector (excluding ADMARC and the Malawi Development Corporation) or an average of K6.1 million per annum, which compares to an average budgeted investment on Development Account in the 1970/71-1972/73 three year rolling Development Programme of K6.8 million per year (of which perhaps K2 million is strictly recurrent expenditure).

7.2 The order of magnitude of these figures is borne out by calculations previously made which estimated total investment on Development Account in Agriculture and Natural Resources during the decade at K78 million. They are also consistent with IBRD (International Bank for Reconstruction and Development) calculations for Malawi which estimated that by 1975 public investment in Agriculture and Natural Resources, including

investment by ADMARC, might reach K10 million per annum out of a total public sector investment programme of around K31 million. On this analysis, Agriculture and Natural Resources could expect to require some K80 million of a total of K250 million of new official foreign loans required for development during the decade, after making allowance for local contribution and strictly non-capital expenditure which will be financed initially through Development Account. On top of this, by the mid-1970s Malawi would be repaying something of the order of K2 million per year on service of existing foreign loans to agriculture. However, the investment indicated in Table III.1 should enable Malawi to attain the export projections calculated in Chapter II and allow the economy to expand at a rate sufficient to absorb this without undue strain.

TABLE III.1: AGRICULTURAL PRODUCTION TARGETS AND INVESTMENT 1971-1980

Crop	Production			Investment (K million)
	1970	1975	1980	
Tea: Estate	38	46.6	52.9	9.0
Smallholder	1	1.1	4.4	2.0
(mn. lb.)				
Tobacco: Western Flue	26	35	40	1.0
(mn. lb.) Burley	10	17	20	} 14.0
	12	17	20	
Maize ('000 tons)	1,271	1,386	1,763	} 20.0 (a)
Groundnuts* ('000 tons)	30	72	110	
Cotton ('000 tons)	23.5	42	63	10.0
Rice* ('000 tons)	11	36	120	16.0 (b)
Other crops	—	—	—	5.2 (c)
Livestock (production beef tons)	7,850	10,400	13,600	2.0 (d)
Fisheries ('000 tons)	26	33	40	1.0 (e)
Forestry ('000 cu.ft. Govt. sales)	425	800	900	3.0 (f)
TOTAL INVESTMENT 1971-1980				K83.20

Notes:

* Amount marketed through ADMARC.

(a) Total investment in projects and settlement schemes and extension exercises with maize and groundnuts as main crops, which will include some investment in Western tobacco and livestock.

(b) Investment in irrigated projects and settlement schemes with rice as the main crop (no provision for farm inputs).

(c) Coffee—K1.0 mn.; sugar K5.0 mn.; no allowance made for investment in horticulture.

(d) Investments in livestock development outside major projects (which are included under other crops)—K1.0 mn. Investment in dairying—K1.0 mn.

(e) Refers to proposed Fisheries Development Project, including capital investment only.

(f) Excluding processing plant (Government investment only).

7.3 The projected total output of agricultural commodities, over and above subsistence requirements, to which this investment will give rise is shown in Tables III.2 and III.3 for 1975 and 1980 respectively. Surplus production in 1970 was approximately 150,000 tons, but this was a poor year climatically and negligible maize surpluses were purchased. "Normal" maize purchases would have raised the total to around 240,000 tons, of which FMB (as it then was) would have bought about 200,000 tons.

7.4 By 1975 total surpluses are expected to amount to 325,000 tons, of which 50,000 tons will be maize, and ADMARC purchases will take up 285,000 tons. Maize surplus production is forecast to rise more rapidly during the second half of the decade, especially

in the Central Region, to about 200,000 tons in 1980. Other crops will amount to 500,000 tons and total ADMARC purchases in 1980 should be in the region of 650,000 tons—more than three times the figure in 1970 if it had been a normal year and more than four times actual FMB purchases last year. The implications of this rapid rise in marketed agricultural production for transport, trade and manufacturing are discussed in the following chapters.

TABLE III.2 ESTIMATED VOLUME OF CROP SURPLUSES—1975

Crop District	Tea (mn. lb.)	Fire/ Air cured (mn. lb.)	Flue cured (mn. lb.)	Burley (mn. lb.)	Ground- nuts ('000s tons)	Seed Cotton ('000s tons)	Maize ('000s tons)	Paddy ('000s tons)	Pulses ('000s tons)	Coffee ('000s tons)	Total Ton- nage ('000s tons)
Chitipa	—	—	—	—	0.20	—	-0.29	—	0.06	0.23	0.49
Karonga	—	—	—	—	1.40	1.20	-0.06	16.00	0.11	—	18.71
Rumphi	—	—	—	—	0.65	1.40	0.56	—	0.35	0.16	3.12
Nkhata Bay	0.70	—	—	—	—	—	-0.41	4.60	—	0.05	5.00
Mzimba	—	0.50	—	—	5.85	—	-1.72	—	0.98	0.02	7.10
TOTAL N.R.	0.70	0.50	—	—	8.10	2.60	-1.92	20.60	1.50	0.46	34.42
Kasungu	—	3.30	7.50	0.50	6.20	—	3.23	—	0.54	—	15.62
Nkhotakota	—	—	—	—	0.20	1.00	-1.94	6.40	—	—	7.60
Ntchisi	—	1.76	—	0.50	1.00	—	0.22	—	0.13	0.03	2.51
Dowa	—	8.44	—	2.60	7.80	—	6.05	—	0.13	0.01	19.51
Salima	—	—	—	3.30	4.20	8.00	-5.11	0.10	—	—	13.95
Lilongwe	—	11.70	—	6.50	26.20	—	54.42	—	4.60	—	94.32
Mchinji	—	2.70	1.50	2.60	3.50	—	-1.88	—	—	—	6.90
Dedza	—	0.50	—	—	3.00	2.00	5.91	—	1.30	—	12.46
Ncheu	—	1.10	0.50	1.00	0.80	1.00	5.02	—	3.30	—	11.42
TOTAL C.R.	—	29.50	9.50	17.00	52.90	12.00	65.92	6.50	10.00	0.04	184.29
Mangochi	—	1.50	3.60	—	1.50	0.50	-0.39	0.20	0.10	—	4.85
Kasupe	—	0.60	0.30	—	3.30	1.50	3.56	1.80	0.30	—	10.91
Zomba	—	2.30	2.20	—	1.60	1.00	0.75	3.50	0.30	—	9.40
Mulanje	17.90	2.30	—	—	0.70	1.70	4.98	1.80	1.60	—	20.88
Thyolo	29.10	—	0.60	—	0.10	—	4.10	—	5.40	—	24.45
Blantyre	—	—	—	—	2.40	1.50	-19.92	—	3.30	—	7.20
Chiradzulu	—	0.30	0.80	—	—	—	1.16	0.10	2.50	—	4.31
Chikwawa	—	—	—	—	—	20.00	-4.90	1.00	—	—	21.00
Nsanje	—	—	—	—	1.40	1.30	-3.12	0.50	—	—	3.20
TOTAL S.R.	47.00	7.00	7.50	—	11.00	27.50	-13.78	8.90	13.50	—	106.20
TOTAL MALAWI	47.70	37.00	17.00	17.00	72.00	42.00	50.22	36.00	25.00	0.50	324.91

Notes:

1. Vertical maize crop total is *net* of deficits.
2. Horizontal district totals are *gross*.
3. Totals may not add exactly due to rounding.

TABLE III.3: ESTIMATED VOLUME OF CROP SURPLUSES—1980

Crop District	Tea (mn. lb.)	Fire/ Air cured (mn. lb.)	Flue cured (mn. lb.)	Burley (mn. lb.)	Ground- nuts ('000s tons)	Seed Cotton ('000s tons)	Maize ('000s tons)	Paddy ('000s tons)	Pulses ('000s tons)	Coffee ('000s tons)	Total Ton- nage ('000s tons)
Chitipa	—	—	—	—	0.30	—	0.77	—	0.12	0.38	1.57
Karonga	—	—	—	—	2.50	2.00	0.93	30.60	0.16	—	36.19
Rumphi	—	—	—	—	0.80	2.30	1.29	—	0.42	0.28	5.09
Nkhata Bay	1.40	—	—	—	—	—	-0.19	16.10	—	0.12	16.92
Mzimba	—	0.50	—	—	8.00	—	4.72	—	1.10	0.02	14.09
TOTAL N.R.	1.40	0.50	—	—	11.60	4.30	7.52	46.70	1.80	0.80	73.86
Kasungu	—	3.30	8.50	0.60	7.00	—	7.20	—	0.64	—	20.54
Nkhotakota	—	—	—	—	0.20	1.20	-1.93	40.00	—	—	41.40
Ntchisi	—	1.65	—	0.65	1.10	—	1.87	—	0.16	0.04	4.33
Dowa	—	7.90	—	3.00	8.40	—	12.26	—	0.16	—	26.27
Salima	—	—	—	4.00	4.50	11.00	-5.58	0.20	—	—	17.70
Lilongwe	—	14.50	—	7.00	52.30	—	188.64	—	5.50	—	257.19
Mchinji	—	2.70	3.10	3.50	5.50	—	0.63	—	—	—	10.78
Dedza	—	1.35	—	—	3.20	2.50	11.39	—	1.60	—	19.37
Ncheu	—	1.10	0.70	1.25	1.00	1.20	8.02	—	4.00	—	15.75
TOTAL C.R.	—	32.50	12.30	20.00	83.20	15.90	222.50	40.20	12.06	0.04	413.33
Mangochi	—	1.60	3.60	—	2.13	1.00	3.86	0.30	0.14	—	10.03
Kasupe	—	0.80	0.40	—	5.22	2.50	5.10	2.00	0.36	—	15.78
Zomba	—	3.00	2.30	—	1.70	2.30	-0.48	5.80	0.36	—	12.81
Mulanje	23.40	2.80	—	—	1.20	2.50	7.36	2.00	1.90	—	27.51
Thyolo	32.50	—	0.60	—	0.20	—	1.84	—	6.51	—	25.90
Blantyre	—	—	—	—	2.70	2.50	-39.98	—	4.15	—	9.35
Chiradzulu	—	0.80	0.80	—	—	—	2.14	0.20	2.72	—	5.71
Chikwawa	—	—	—	—	—	30.00	-4.83	22.40	—	—	52.40
Nsanje	—	—	—	—	2.00	2.00	-3.86	0.40	—	—	4.40
TOTAL S.R.	55.90	9.00	7.70	—	15.20	42.80	28.85	33.10	16.14	—	163.89
TOTAL MALAWI	57.30	42.00	20.00	20.00	100.00	63.00	201.17	120.00	30.00	0.84	702.62

Notes

1975 maize figure assume increases in acreage in deficit Districts.
For 1976-80 no increases in maize acreage are assumed.

1. Vertical maize crop total is *net* of deficits.
2. Horizontal district totals are *gross*.
3. Totals may not add exactly due to rounding.

Chapter IV

Transportation and Communications

1 Introduction

1.1 Transport is primarily a service industry and as such transportation capability is not an end in itself; its growth is dictated by the growth in Malawi's economy and, more specifically, by development in agricultural, industrial and tourism potential. Malawi's general development strategy thus dictates the appropriate transport investment strategy, although the former must take into account—via location policy—transport costs as one of the relevant factors. Within this broader context, the objective of transport planning is to ensure that traffics will be carried at the lowest cost to the economy. The fact that deficiencies in transport facilities exist today and will emerge in the future does not mean that all mooted improvements are economically desirable. Investments in transport must be selected on the basis of foreseeable need with a consciousness of other needs or possible investments.

1.2 Until very recently the expectation of resource misallocation in transport investment in Malawi was small, since at Independence Malawi's transport infrastructure was characterised by a remarkable degree of inadequacy and early reliance on qualitative appraisal was not out of place. The danger is that such methods may persist in a changed environment. The heavy emphasis placed on remedying the more glaring deficiencies in transport facilities since 1964 has, as a consequence of its success, increased the difficulty of investment choice between both modes and sectors. For the future greater emphasis will be placed on quantitative appraisal as a means of ensuring the maximum productivity of transport investment within the context of Malawi's general development objectives.

1.3 Comment so far has been solely in terms of the economic functions of transport facilities; however, transport cannot be divorced from public wants in terms of political, social and security requirements. As such, it would be naive not to recognise explicitly that there are costs and benefits other than economic ones which must be given full weight in the final formulation of transport policy. Equally, such considerations would be very much out of place here and discussion is limited to the basic economic aspects.

1.4 The basic premises that underline Malawi national transport policy are:—

- (a) transport investment should be concentrated on projects which give promise of net returns to the economy in accordance with standard investment criteria;
- (b) transport investments should be designed to standards capable of meeting reasonably foreseeable traffic needs or make possible levels of production and traffic growth which, in the absence of the investment, would not have been achieved; and
- (c) unnecessary duplication of facilities should be avoided.

2 Physical and Economic Base

2.1 Malawi is a physically small landlocked country with a total area of 45,747 square miles of which Lake Malawi occupies approximately one fifth. Its length and its lake lie north-south, which induces a natural emphasis on longitudinal lines of internal transport. The lack of an indigenous sea outlet compels a high degree of transport integration with Mozambique. In this context, geographic location has proved to be a serious economic constraint in that the relative allocation of route mileage to port outlets confers a monopolistic position on the Mozambique Railway Administrations. Yet location also provides potential benefits in the possibility of Zambian and Mozambique transit traffics. In the

former case, such trade in the past has proved to be more a function of short term political expediency than of economics. However, in the medium or long term, given the effective pursuit of internal transport efficiency, Malawi is well placed to become a least-cost link in Zambia's international trade network, even allowing for the construction of the Tanzania-Zambia rail link.

2.2 Other Chapters deal in detail with the general economic structure of Malawi and the internal and external production patterns it generates. Such comment is not duplicated in this section which is concerned with the transport implications of such structures. While as yet no meaningful quantitative breakdown of current internal transport flows by value of composition is possible, nevertheless, given the predominance of small scale agriculture in the economic structure of Malawi and the inter-connected low *per capita* purchasing power the assumption that the majority of internal trade flow is concerned with the disposal of inter-and intra-district agricultural surpluses and associated inputs seems indisputable. Further, for the majority of the population the economic value of travel time and therefore of any savings in such is very low, and as a consequence, transport investment proposals based on potential and actual passenger demand are both difficult to justify and negligible in comparison with commodity movement requirements. There are exceptions to this generalisation, the most obvious example being that of specific access projects linked to tourism development, but such requirements should be carefully examined in order to ensure their economic viability.

2.3 In terms of foreign trade, an examination of Malawi's origin and destination patterns reveals the singular importance of the United Kingdom both as a market for exports (52 per cent in 1970) and as a source of imports (26 per cent in 1970). In contrast the principal trading partners on the African continent (Zambia, Rhodesia and South Africa) took in total only 14 per cent of Malawi's exports and provided some 40 per cent of total imports in 1970. By their very composition and destination patterns Malawi's exports are generally characterised by low value-weight ratios and often extreme geographical isolation from final markets. Add to this the fine degree of price competitiveness necessary for short and long term participation in world commodity markets and the importance of transport costs in determined final export "value added" is obvious. Further, the importance of the transport cost element in determining export profitability has a partial corollary in the similar sensitivity of total import cost. Such characteristics cannot be expected to change radically within the 1971-80 perspective.

3. Inventory and Assessment of Existing Facilities and Services

3.1 Malawi has four principal transport systems:

- (1) internal/external road transport;
- (2) internal/external rail service;
- (3) internal/external air service; and
- (4) Lake Service.

However, the central spine of the Malawi commodity transport network is the railway and historically the road transport industry has provided a feeder service to rail. This general distinction between long haul rail services and feeder-service road transport has considerably crumbled since Independence. Such a development has been consequent upon a number of inter-related factors—particularly the removal of the railways special preference along scheduled routes in 1966 and the accelerated increase in road transport capacity that was both a cause and effect of this change. Rail, however, will continue to remain the sole practical outlet to the Indian Ocean ports of Nacala and Beira for bulk commodity movements.

3.2 Road Transport

3.2.1 Of Malawi's present road mileage only some 6.5 per cent is fully bituminised, while 86 per cent is still earth surfaced. Table I below lists miles of roads by class and surface.

TABLE IV.1 MILES OF ROADS BY CLASS AND SURFACE, 1970

Administrative Classification	Total	By Type of Surface		
		Bitumen	Gravel	Earth
Main	1,831	420	360	1,051
Secondary	1,410	14	107	1,289
District	3,281	2	20	3,259
Branch	63	—	—	63
Estate	86	2	14	70
Private streets	14	—	14	—
Undesignated	16	—	—	16
TOTAL	6,701	438	515	5,748

Source: Ministry of Works and Supplies

The trunk routes are organised round and connected to focal points at Blantyre/Limbe in the South and Lilongwe in the Central region. Specific development strategy here has partly followed from the longitudinal stretch of the country, inducing a 'high' (M.1) and a 'low' (Lakeshore Road) north-south routeing. There are still missing links and inadequate sections, improvement of which is being given high priority by Government. It is emphasised that given Malawi's physical shape such geographical parallels are virtually inescapable and are not necessarily duplicatory. The principal road links with adjacent territories are south-west to Rhodesia, (M.2), north to Tanzania (M.1) and north-west from Lilongwe to Zambia (M. 4). The existing network of feeder roads, that is roads whose principal function is to facilitate the despatch of agricultural produce from farmers or estates to local or national markets, is at best patchy, the majority of such roads being low grade, earth surfaced with limited drainage and sub-standard bridging.

3.2.2 The pattern of ownership for the professional sector of road haulage is heavily weighted towards small fleet sizes, with over 60 per cent of all operators owning only one vehicle and accounting for some 16 per cent of the industry's capacity. At the opposite end of the scale two major transport companies own between them approximately 30 per cent of the vehicles operated for hire and reward, thereby accounting for just under 40 per cent of total road movement capacity. The distribution of vehicles according to payload capacity indicates that the majority (some 55 per cent) of professional haulage vehicles have payloads of over five and under seven tons, while just over one-third have payloads of more than seven tons. Further, although there is a trend towards the increased employment of vehicles of seven tons and over carrying capacity, it is important to fix this in perspective, for there are still more than twice as many five ton as seven ton lorries in the professional sector of the road transport industry.

3.3 Rail Service

3.3.1 The railway operates over a 3 foot 6 inch single track totalling some 352 rateable miles. From the northern terminus at Salima to the Indian Ocean Ports of Nacala and Beira is some 552 and 562 rate miles respectively. In the south, the Malawi Border to Nsanje section roughly follows the course of the Shire River and has flat gradients and easy curves; after Nsanje it traverses undulating country within the Shire Valley to Chiromo and then makes for the valley of the Ruw River. Leaving Sankhulani at 257 feet above sea level the line climbs the escarpment to the Shire Highlands. It makes the climb of about 3,500 feet to a summit just west of Limbe in less than 70 miles. From Limbe the grade drops to the Shire River, where the elevation is 1,550 feet then climbs again to a summit at an elevation of 2,344 feet north of Bilila and descends to 1,663 feet at Salima. The ruling gradient between Shire and Salima is 1 in 60 compensated.

3.3.2 The railway from the southern border to Balaka is constructed with 60 lb. flat bottomed rail on both steel and hard wood sleepers and partially stone ballast. The Balaka to Salima section is laid with 40 lb. material and not stone ballasted. During the rainy season washaways are frequent and the permanent way structures in general are in poor condition due to expired material. South of Balaka maximum axle loads of 14½ tons for four wheeled wagons and 16½ tons for bogies are in operation. However, even relatively, the track north of Balaka is in very poor condition and an axle load restriction of 10 tons for shorts and 11 tons for bogies is necessary due to light rail. This means, for instance, that a bogie wagon of 17 tons rate is able to carry a full load of 40 tons or more from Beira to Balaka, but is restricted to 27 tons on the Balaka to Salima section. Sometimes it is necessary to reduce wagon loads at Balaka, thereby exacerbating motive power shortages. The lines has a rail/lake interchange station at Chipoka on Lake Malawi, whence both passenger and cargo services are operated to other lake ports.

3.3.3 In view of the complete reliance which hitherto had to be placed on the existing rail link to Beira, an alternative rail route to the coast at Nacala has been recently constructed. The Malawi section, which leaves the Nsanje-Salima line just south of Balaka, totals 63 miles and consists of 80 lb. continuous welded rails, laid on concrete sleepers. It is capable of taking 18 ton axle loads at speeds of up to 45 miles per hour. The terrain is fairly easily graded with a maximum gradient of 1:150 except for a 6½ mile long escarpment where it is 1:110.

3.3.4 In addition Malawi Railways operate a local collection and delivery service in Blantyre/Limbe and co-ordinated trunk road haulage arrangements are carried out by Road Motor Services—a wholly owned subsidiary. A breakdown of recent operating statistics for Malawi Railways proper is given below in Table 2.

**TABLE IV.2: MALAWI RAILWAYS LIMITED: GOODS TRAFFIC
REVENUE AND EXPENDITURE 1964-1970**

Year	Total goods Traffic (‘000 tons) 1	Export Content Public Traffic only (‘000 tons) 2	$\frac{2}{1} \times 100\%$ 3	Total Revenue (K‘000) 4	Total Expendi- ture (K‘000) 5	Gross operating surplus (K‘000) 6
1964	502.1	322.4	64.2	2,302.6	1,815.0	487.6
1965	598.8	367.4	61.4	2,791.6	2,028.2	763.4
1966	765.6	440.2	57.5	4,123.4	2,614.0	1,509.4
1967	938.8	519.0	55.3	4,926.6	3,037.2	1,949.4
1968	1,028.9	556.7	54.1	5,190.4	3,684.8	1,505.6
1969	948.9	485.6	51.2	4,777.8	3,932.4	845.4
1970	1,090.6	578.1	53.0	5,151.6	4,162.2	989.4

NOTE: Column 2 does not include Zambian traffic; 1970 totals are all estimates and include carriage on the remaining 16 miles of C.A.R. track.

Source: Ministry of Transport and Communications

3.3.5 Between 1960 and 1966 goods traffic rose at an average rate of some 8 per cent compound per annum. However, the routing of sizeable quantities of Zambian traffic through Malawi following the Southern Rhodesian Declaration of Independence caused this average rate to double between 1966-68. In 1969 this traffic virtually ceased and reversion to an indigenous traffic growth rate of some 10 per cent is to be expected.

3.3.6 The present economic and financial situation of the Railways is dominated by two features:

- (1) the need to provide for capital and interest payments on the Nacala line; and
- (2) the system's advanced state of physical deterioration which, as noted earlier, necessitates low speeds and light loads.

In sum the combination of high operating costs and Nacala financial obligations has induced a difficult financial situation. To overcome this a programme of financial and economic reconstruction has been devised, but comment on this is reserved until section 5.

TABLE IV.3: MALAWI AERODROMES

<i>Aerodrome</i>	<i>Elevation (Feet)</i>	<i>Runways (Metres)</i>	<i>Surface</i>	<i>Hours of Operation</i>
Chileka	2561	2325 × 30 1372 × 30 731 × 30	Asphalt Asphalt Grass	Mon-Sat 0400-1630 GMT Sun 0630-1630 GMT Other Times 24 hrs PN
Lilongwe	3722	1363 × 30 1383 × 30	Bitumen Grass	Mon-Fri 0530-1400 GMT Sat 0700-1530 GMT Sun Nil
Chitipa	4300	1825 × 44	Grass on Gravel	Sunrise to Sunset
Dedza	5240	971 × 47 959 × 46	Grass Grass	Sunrise to Sunset " "
Mangochi	1580	720 × 61	Grass	Sunrise to Sunset
Karonga	1736	1280 × 30	Gravel with Bitumen Cover	Service available on request
Kasungu	3500	1042 × 47 831 × 47	Grass Grass	Sunrise to Sunset " "
Katumbi	4215	1006 × 30	Grass on Sand	Sunrise to Sunset
Likoma	1600	731 × 30	Grass	Sunrise to Sunset
Monkey Bay	1600	885 × 49	Grass	Sunrise to Sunset
Mzimba	4440	871 × 32	Grass	Sunrise to Sunset
Mzuzu	4115	1402 × 19	Gravel	Service available on request
Nkhotakota	1720	784 × 45	Grass	Sunrise to Sunset
Nsanje	200	823 × 30	Grass	Sunrise to Sunset
Mtakataka	1750	700 × 30	Compacted Soil	Sunrise to Sunset
Ntchisi	4300	822 × 30	Compacted Soil	Sunrise to Sunset
Salima	1200	1384 × 45	Grass	Service available on request
Zomba	2650	1306 × 30 525 × 30	Grass Grass	Sunrise to Sunset " "
Chelinda	7760	1005 × 30	Grass	Sunrise to Sunset
Chirumba	1610	732 × 30	Compacted Soil	Sunrise to Sunset
Kasungu/Lifupa	3330	1097 × 30	Grass	Sunrise to Sunset
Luchenza	2270	549 × 46	Grass	Sunrise to Sunset
Nchalo	225	732 × 30	Compacted Soil	Sunrise to Sunset

Source: Ministry of Transport and Communications

3.4 Air Service

3.4.1 Malawi has some twenty-three aerodromes, of which the primary ones are the international airport at Chileka, and Lilongwe, the remainder being largely improved grass access strips. Data on runway length, type of surface and operational hours of service are given in Table IV.3.

3.4.2 Air Malawi, a wholly Government owned statutory body, operates a network of internal services based in Chileka, whose schedules (both passenger and freight) cover the Central and Northern Regions. The Airline also operates international services from Chileka to Salisbury, Beira, Lusaka, Nairobi and Johannesburg; Air Rhodesia from Salisbury; Zambian Airways from Lusaka and Mauritius; B.O.A.C. from Nairobi, London and Europe; East African Airways from Dar-es-Salaam and Nairobi; and D.E.T.A. from Beira. Executive charter services to centres in Malawi and adjacent territories are also provided. Air Malawi's fleet now comprises two Viscounts, two H.S. 748's, two Britten Norman Islanders and a BAC 1-11 on lease from Zambia Airways. The latter leasing arrangement is soon to be terminated on the supply side and Air Malawi are presently considering the purchase of a similar jet. In general, the financial funding necessitated by any additions to the existing fleet will originate largely outside the public sector proper. The construction of a K256,000 maintenance base at Chileka Airport has allowed Air Malawi to undertake maintenance not only of its own aircraft fleet but also those of visiting airlines and locally based light aircraft. Table IV.4 outlines traffic movements through Chileka Airport over the period 1965 to 1970.

3.4.3 At present there is no evidence of any substantial or sustained unfulfilled demand for internal or external air service. Air Malawi are producing a workable net operating surplus, but the heavy cross-subsidisation involved in their operations, in particular the dependence on the WENELA Contract, induces a considerable degree of dependence on external factors. However, the realignment of marketing strategy presently underway—as reflected in the recent negotiation of an Air Services Agreement with Cyprus—is designed to bring about a more secure revenue base for the future.

TABLE IV.4: TRAFFIC MOVEMENTS THROUGH CHILEKA AIRPORT

Year	Passengers handled	Freight ('000 kg)	Mail ('000 kg)
1965	70,600	501.1	102.2
1966	68,467	587.1	107.0
1967	96,050	820.3	128.9
1968	104,117	970.9	159.1
1969	131,423	1,094.1	161.7
1970	161,866	1,133.9	188.2

Source: Ministry of Transport and Communications

3.5 Lake Service

3.5.1 The Lake Service has been operated by Malawi Railways Ltd. since 1953, although full ownership of assets was only achieved in 1969. Its primary function has been to serve the transportation needs of the Northern Region. The Principal Lake Service fleet is listed in Table IV.5. There are also five tugs, some six barges and several oil pontoons. Lake Service Headquarters is at Monkey Bay, where dockyard and other facilities exist. The only other port facilities are at Chipoka—the present rail/lake interchange point—and Nkhata Bay.

3.5.2 The Lake Service has consistently run at a financial loss; the last time that in gross terms revenue exceeded expenditure was in 1945. Table IV.6 below shows the passenger and cargo traffics and the operating losses since 1965.

3.5.3 The operating losses can be closely identified with chronic vessel under-utilisation, itself a consequence of vessel type, inadequate port and handling facilities and the limited and spasmodic traffics on offer. Such bottlenecks have also served to reduce the quality of the service below an acceptable level. Historically the passenger service has been classified as a necessary social service to provide communications with the remoter parts of Malawi, including Likoma and Chisumulu Islands. In recognition of this the Malawi Government contributes approximately K62,000 annually towards the loss, in the form of reduced interest on debenture stock. The development of the Lakeshore road should considerably reduce the need for a subsidised passenger service, by allowing the Lake Service to withdraw from short-haul passenger traffic and concentrate on long-haul goods traffic from Chilumba and Nkhata Bay to Chipoka or Monkey Bay.

TABLE IV.5: LAKE SERVICE FLEET 1970

Vessels	Cargo (short tons gallons)		Passengers
M.V. 'Ilala'	100		500 by day
M.V. 'Mpassa'	61	28,000	359 by night
M.V. 'Chauncy Maples'	20		206
M.V. 'Nkwazi'	200		—

Source: Ministry of Transport and Communications

TABLE IV.6: LAKE SERVICE OPERATING STATISTICS 1965-70

Year	Tonnages (short tons)	Passengers	Gross operating loss (Kwacha '000)
1965	16,600	40,900	129.4
1966	22,400	60,200	126.0
1967	19,500	73,400	190.0
1968	18,100	108,000	221.6
1969	23,800	114,000	147.0
1970	(esti- 25,500 mate)	109,000	118.0

Source: Ministry of Transport and Communications

3.6 Modal Transport Costs and Pricing Structure

3.6.1 Given the dominant importance of bulk commodity flows in the Malawi transportation system, comment on modal transport costs and pricing structures is confined to the bulk movement modes—road, rail and lake.

3.6.2 It is difficult to assess comparatively the economic cost structures of competing transport modes, mainly because of the relative differences in their variable and invariable cost split, which itself is affected by the time period chosen for the evaluation. However, there is evidence that a degree of distortion exists both absolutely and relatively between modes in terms of economic and financial movements costs. Specifically, commercial road transport charges are markedly in excess of estimated economic costings, while lake and rail user tariffs are often set at levels below economic recoupment potential. To a considerable extent such distortions are products of flat rate commodity discriminatory tariffs based on goods value rather than cost of carriage. For example, as a general rule, export crops are charged at marginal cost, while fixed costs are covered by the rates on imported manufactures.

3.6.3 Rate differentials based on crop values rather than on differences in transportation costs tend to discriminate in favour of low-value at the expense of high-value crops. On the other hand, there are severe physical constraints on the possibility of substitution within the agricultural sector and the present rating system has an equity function in helping to raise the incomes of people in areas which are agronomically unsuitable for the production of high-value crops.

3.6.4 Similarly, the policy of recouping rail overheads from manufactured imports rather than from agricultural exports is in keeping with the basic economic strategy of protecting the interests of the mass of the population who live in the rural areas and on whom the success of our development policies ultimately depends. However, it is important to avoid the introduction or continuation of distortions which are likely to have seriously adverse effects on investment priorities and therefore, on the value of total output. It will therefore, be necessary to examine the rail tariff system, in the light of the overall economic strategy, to evaluate the degree to which a closer identification of financial with real economic costs of transport is desirable.

3.6.5 As mentioned in para. 3.2.2, road transport operations on the supply side are dominated by two major companies. In the past, the hegemony of the two majors has been enhanced by the rate payments policy of the largest single customer, ADMARC, which paid a flat ton-mileage rate for produce deliveries. Since the "majors" tend to engage in long-haul freight on main roads, while the smaller operators in MRTA were mainly confined to short-hauls on secondary and "bush" roads, this gave them an effective price advantage, which was further supported by restrictions on the issue of licences.

3.6.6 Recently, entry conditions have been relaxed and ADMARC is introducing a new rating structure, on an area contract basis, with differentials for different road conditions. This should bring about a marked improvement in the profitability of small-scale road haulage operations—a development which is not only inkeeping with Malawi's basic economic objectives, but also constitutes an essential link in both agricultural and trade policies. In general, the distortions induced by unnecessary cross-subsidisation and inappropriate pricing systems will be best eliminated by essentially structural policies designed to encourage a much greater degree of *intra* and *inter* modal competition.

3.6.7 Malawi's freedom of action in relation to railway rating patterns is limited by the integration of its rail transport system into the Southern African network. Nevertheless, some flexibility still exists in terms of a realignment of classifications closer to the real commodity carriage costs. Unlike road transport, where the basic unit of capital investment is relatively small, the real efficiency and therefore, the physical capacity of the rails system will not, in the short term, be significantly improved by rating adjustments in isolation, though the latter is a pre-requisite of medium term viability. Rather, the immediate inadequacies in terms of high cost and low movement capacity is a simple consequence of the advanced state of physical depreciation characteristic of the basic capital assets. First priority is therefore given to an expenditure programme designed to effect the rehabilitation and increase the motive capacity of the existing railway. To a large extent, this investment represents little more than deferred maintenance and is essential to the continuance and improvement of existing traffic capacity. Proposals for further extensions of the system most accordingly await the completion of the rehabilitation programme.

3.6.8 Arguments of a similar genre apply to the Lake Service, except that the gap between economic and user cost is a good deal larger and basic capital assets are characterised more by their absence or unsuitability than by their advanced state of disrepair. Accordingly, the investment programme mooted for the Lake Service is primarily one of construction and replacement, rather than of rehabilitation proper.

3.6.9 Road investments boast a considerable inter-modal advantage in their greater degree of design standard flexibility. This, in combination with the institutional divorce from the road transport industry, induces a comparatively wide range of development

options. Apart from specific project-linked feeder developments, marked inadequacies exist along sections of the main trunk system. Accordingly, a substantial programme of both construction and up-grading is economically desirable. Specifically priority is given to the continued improvement of the 'high' (M.1) and 'low' (Lakeshore Road) longitudinal links, and the upgrading and realignment of the present Zambian (M.4) and Rhodesian (M.2) east-west routes.

4 Perspective Demands and Guidelines for Transport Investment

4.1 The demand for freight transportation in Malawi through to 1980 will be generated primarily by agricultural production, supplemented by developments in the secondary and tertiary sectors. However, transport requirements can be expected to grow at a considerably higher rate than total domestic economic activity because of the very substantial subsistence sector which induces little commercial carriage demand. As such monetary Gross Domestic Product (GDP) provides a better guide from the standpoint of transport planning than total income. The average annual compound rate of growth at constant prices achieved by the monetary sector of the Malawi economy between 1964 and 1970 was 7.6 per cent, and on balance a somewhat higher rate can be expected to be in evidence through to 1980, as outlined in Chapter IX.

4.2 In terms of the physical crop surplus projections detailed in Chapter III, it is estimated that the level of total surpluses of all types will rise from a trend figure of some 200,000 tons in 1970 to 325,000 in 1975 and 700,000 in 1980. This would be equivalent to an average annual compound growth rate of some 11 per cent for 1970-75 and 16 per cent thereafter. However, the productivity impact of existing and proposed pricing and investment policies should progressively serve to reduce incremental transport capacity needs by some 2 to 3 per cent by 1975, rising to say 4 to 5 per cent by 1980. Hence, given that import will rise with the level of domestic activity, incremental freight service needs can be expected to average out at the order of some 8 to 10 per cent compound through to 1980. Further, the marginal cost of meeting these needs should progressively decline with the continuous elimination of present inadequacies in infrastructure.

4.3 The requirement of passenger transport demand will generally be satisfactorily met either by the "piggy-back" aspects of developments justified on commodity movement grounds or economic pragmatism in the expansion of air services and passenger rolling stock. Nevertheless, some quantification of the expected growth in passenger transport demand is required. Indigenous passenger transport demands tend to rise with both growth in population and disposable income. Further, in a period of expanding transport facilities, traffic is induced by the new facilities and by services that would not otherwise have developed. An indicative estimate may be achieved by combining a population growth rate of some 2½ per cent with a *per capita* increase in real disposable income of 5½ per cent and then allowing a nominal induction effect factor. The result is much in agreement with the 8 to 10 per cent commodity traffic growth estimate. Tourists and associated high value passenger traffics can be expected to expand at a considerably faster rate, largely because of their low initial levels. (See Chapter II for details of projected tourist traffic.)

5 Indicative Transport Investment Targets

5.1 It is, of course, impossible to foresee with any precision all the public sector investment requirements that will arise in transport over a 10 year perspective. The need for a new facility or approach may arise unexpectedly and present flow patterns will undoubtedly change. Further the scale and nature of transport investments not only allows the possibility of considerable cost escalation, but also demands rigorous scrutiny (before commitment) to ensure adequate returns. It is emphasised that financial and economic feasibility studies of this nature have yet to be undertaken for a large number of critically large projects and, while such studies are being instigated as a matter of urgency, in the present planning environment any preliminary specification may of necessity be subject to drastic revision. Further, since for the period 1971-1980 all major transport investments will need to be externally financed, the above arguments are underlined by the need to satisfy aid donors as to the economic use of funds as a pre-requisite to disbursement.

5.2 In terms of the timing of modal investments it is both convenient and practical to adopt a two stage approach i.e. 1971/2 to 1975/6 and 1976/7 to 1979/80. While it is easier to forecast requirements in the former subperiod, the existence of numerous "floating" projects induces an uncomfortable degree of arbitrariness, particularly as the subperiod progresses beyond 1973/4. As a general principle all major projects whose economic desirability and therefore planning incidence remains undetermined are listed as annotated possibilities for implementation in the subperiod 1976/7 to 1979/80.

5.3 Transport Investment 1971/2 to 1975/6

5.3.1 In terms of road development, initial priority is attached to the completion of the already initiated programme of upgrading the national and feeder road network by works of major reconstruction and improvement. The completion to Class I bitumen standard of the 118 mile Zomba to Lilongwe section of the M.1 is expected to be completed by August 1971, with financial year 1971/72 expenditure totalling some K1.67 million. Present Government firm commitments associated with the stage development of the Lakeshore Road amount to some K7.47 million over the period 1971/72 to 1973/74. In this context firm commitments being defined as inclusive of the Nkhonkhotakota to Nkhata Bay link, the AID financed Lakeshore Road section, the Karonga to Chiweta road construction and bituminisation project, the building of the Dwangwa and Dwambazi bridges and the bituminisation of the Liwonde to Monkey Bay road. Provisional allocations of some K1.88 million have also been allowed for other related Lakeshore Road projects—specifically the upgrading and/or reconstruction of the sections Salima to Benga to Nkhonkhotakota, Nkhonkhotakota to Nkhata Bay and the Chia Lagoon bridge. The remaining major individual road project commitment concerns the construction of the Blantyre to Tete link on a new alignment via Chikwawa. To be completed in 1973/74, the construction works are costed at some K5.0 million. The continued expansion of the feeder road network and the programme of general improvements is expected to total some K0.6 million over the full subperiod. Taking a somewhat conservative view as to the total cost of Rumphu-Chiweta road in the Northern Region, and the relatively minor residual bag of projects, the total first stage priority investment requirement in the road sector is unlikely to be less than some K17.2 million. Such an estimate is liable to be a considerable understatement of the eventual full period 1971/72 to 1975/76 outcome, if the various pre-investment studies yet to be undertaken are markedly positive in conclusion. However at the time of writing, ignorance of costs and the need to avoid subjective prejudgment allows only a tentative listing of further road project/possibilities. It is therefore convenient to detail such a listing at Section 5.4.1 below.

5.3.2 In order to redress the serious physical deterioration of the Malawi Railway system, a five year "rolling" programme of renewals and replacements has been devised. The items included in this programme have been limited to the absolute priorities which are essential to keep the railway in operation or have a high earning factor. As such, investment is to be concentrated in the improvement of the permanent way—particularly the section Balaka to Salima, telecommunications systems and the acquisition of additional locomotives and rolling stock. Total expenditures on these items are expected to sum to some K7.2 million over the five years period 1971/72 to 1975/76. Faced with an annually diminishing deficit on current account, which is expected to be of the order of K1.4 million cumulative 1971/72 to 1975/76, and with the need to contain requests for external finance to realistic proportions, the proposed capital investments can be considered modest and unavoidable in relation to the level of further investments ideally required to rehabilitate Malawi Railways to an acceptable standard and develop the system.

5.3.3 Apart from the continuation of Stage II of the Blantyre Airport and other relatively minor aerodrome improvements at a total cost of under K0.5 million, the public investments perspective for civil aviation hinges on the proposed construction of the Lilongwe International Airport. Provisional proposals exist for construction and operational by end 1975, and the capital costs of this project are being evaluated. Present "guesstimates" suggest that solely in terms of direct construction and equipment cost, an expenditure total of not less than K12.0 million is likely.

5.3.4 Lake Service investment proposals involve the purchase of self propelled barges and the provision of adequate port and handling facilities at Monkey Bay and Chirumba which will then become the Southern and Northern terminals respectively. It is recognised that given the successful rehabilitation of the railway section Balaka to Salima, reconsideration will have to be given to possible Southern terminal location at Chipoka as against Monkey Bay. However, it is unlikely that the investment totals proposed here will be radically altered in the event of such a locational revision. Investment requirements directly attributable to the Lake Service are estimated for the sub-period 1971/72 to 1975/76 at K0.58 million.

5.3.5 Allowing also for possible additional finance of the order of K0.3 million needed to improve the efficiency of small scale transport operations, a summation of the above provisional modal allocations indicates a total transport sector public investment requirement approximating to K37.8 million over the sub-period 1971/72 to 1975/76.

5.4 Transport Investment 1976/77 to 1979/80

5.4.1 Apart from the need to substantiate the provisional allocations set against the continued development of the Lakeshore road, (see section 5.3.1) the following road development projects are being investigated:—

- (1) Lilongwe to Mchinji, but also having regard to the full route Salima to Lilongwe to Mchinji;
- (2) Improvement/extension of the existing M.1, Lilongwe to Kasungu to Mzimba;
- (3) Mzuzu to Nkhata Bay; and
- (4) Chikwawa to Bangula.

Again it is emphasised that given positive conclusions, implementation dates are likely to be considerably advanced for the above projects.

5.4.2 Other possible points of road project identification are listed in Table IV.7 below. No order of priority is assumed, largely because no order of cost is yet known.

TABLE IV.7: OTHER ROAD PROJECT POSSIBILITIES 1976/7 TO 1979/80

<i>Road</i>	<i>Comment</i>
Southern Region	
Chiromo to Nsanje	Dependent on agricultural Development of Lower Shire Valley
Chikwawa to Chiromo by East Bank	Dependent on East Bank potential
Blantyre to Thyolo to Mulanje to Phalombe	Dependent on commodity and tourist traffic
Blantyre to Matope to Balaka	The most direct link to Lilongwe
Northern Region	
Mzimba to Vipya to Mzuzu	Improved connection to Northern Region headquarters
Mzuzu to Rumphu	Dependent on agricultural development of Henga Valley
Wenya to Nthalire	To avoid dependence on Zambia for access to Chitipa
"Chendo Track" (Karonga to Chitipa)	Improved access to Karonga Hinterland

Source: Development Division

5.4.3 From 1976 onwards, substantial continuing expenditures designed to maintain and improve the movement capacity of existing rail facilities will be necessary if the 1971 situation is not to re-emerge. Specific needs should be identified within the context of the "rolling" five year capital budget development programme. Given both the necessary rehabilitation expenditures 1971/2 to 1975/6, and the earlier mooted rating revisions, it is not excessively optimistic to suppose that 1976/7 to 1979/80 railway capital expenditures directed at the existing system could largely be financed out of internally generated operating surpluses.

5.4.4 Additional sources of finance however, will be called upon if either or both of the possible extensions to the existing system are undertaken. These are an extension from Salima to Mchinji via Lilongwe with the eventual aim of linking with a possible new Zambia Railways line to Chipata, at present estimated to cost some K30 million; and the Malawi section of a western link to connect with the Mazambique system at Vila Caldas Xavier which would account for some K16.0 million. Such tentative estimates may be subject to considerable increases in costs before implementation. The economics of railway extension largely revolve around a trade-off between the variable movement cost advantages of rail over road bulk carriage, and the high capital costs of railway construction. Further, since the variable cost-benefit differential can be expected to progressively narrow, catchment tonnages need to be high, both absolutely and potentially, in order to generate an adequate return on capital invested. Even by 1980, internal Malawi production will not approach satisfaction of the absolute constraint and, as such, the economic viability of both railway extensions rests on the assurance of minimum levels of transit traffic from Zambia and Mozambique respectively.

5.4.5 Apart from possible additional expenditure arising from the construction of Lilongwe International Airport, the public sector investment requirement of air services should not loom large within the sub-period 1976/7 to 1979/80, improvements directly linked to traffic levels and patterns possibly being of the order of K1.0 million in total. A degree of bridging finance may however, be necessitated, if it is deemed economic to expand Air Malawi's services to include participation in long haul trunk international routes.

5.4.6 Investments in the Lake Service from 1976 onwards are given a much higher modal priority than in the first sub-period and the continued replacement of vessels and port developments can be expected to require substantial sums. The outcome of studies investigating the medium and long term feasibility of the navigability of the Upper Shire to Liwonde may exert considerable influence on the scale and nature of future transport investment and on the location of commercial and industrial installations. These will also be affected by final decisions regarding the proposed Vipya Pulp and Paper Project.

6 Posts and Telecommunications

6.1 The development of postal services and telecommunications facilities is, of course, closely related to the requirements of commerce and industry in Malawi. Although during the course of the decade the number of individuals able and willing to afford private telephone services and making use of telegraphic facilities will undoubtedly increase, demand from this source will be small in relation to the demand from business enterprises and Government.

6.2 All postal and telecommunications services in Malawi are provided by the Department of Posts and Telecommunications of the Ministry of Transport and Communications. Postal services are operated in the usual way except that mail delivery is only to post office boxes and there is no house-to-house delivery service. Largely for this reason, the Malawi Post Office is unusual in being able to make a reasonable profit on its total expenditure. No major changes in the postal service are contemplated during the decade and the only investment required will be the replacement and extension at existing post offices, particularly in urban and heavily populated centres, and postal agencies as new centres of population are created. The sums involved are expected to be small, especially when compared with the considerable investment which will be required in telecommunications services.

6.3 Telecommunications can be sub-divided into telegraph, telephone and telex communications. In most countries nowadays, the volume of telegraphic traffic is declining in view of the greater convenience obtained from telephones and telex equipment. However, in Malawi in recent years telegraphic traffic has shown a continued upward trend, but this is expected to level off in the near future. For this reason, no large net investment in the telegraphic system is contemplated.

6.4 The telephone system has developed rapidly in recent years. Traffic is now increasing at the rate of 14 per cent per annum and the growth in net connections is 9 per cent per year. With the general increase in economic activity outlined in other parts of this *Statement* and, particularly, with an expected growth in manufacturing industry of the order of 10 per cent per annum, a comparable rate of growth is expected during the coming decade. This will require the installation and extension of trunk circuits and a move to more sophisticated equipment in the main exchanges. Precise details of the investment plan are still in the course of preparation and will be included in the normal three-year rolling programme for public sector investment.

6.5 In addition to the main exchange, there are thirty rural exchanges. It will be clear from the outline of agricultural development given in Chapter III that considerable additional demands will be placed on rural communications during the coming decade and this will require an improvement in the capability and efficiency of rural telephone exchanges. Most of these are manually operated, which imposes narrow limits on their ability to cope with increased traffic. Consideration is being given to the gradual replacement as traffic increases of manual exchanges by automatic exchanges and provision for this will also be included in the detailed development estimates.

6.6 The growth in the use of telex services in recent years has been phenomenal, with approximately forty new connections being installed each year. Experience in other countries, together with the expected general increase in business activity, indicates that the demand for telex services will continue at a high rate. Although this involves considerable capital expenditure, it provides a high rate of return to the Telecommunications Department and it is hoped that finance will be available to continue extending telex services to meet demand.

6.7 In general, therefore, policy with regard to both postal and telecommunications services is to maintain and expand facilities in line with the expected increase in demand for the various types of services required, while at the same time avoiding tying up scarce capital resources in excess capacity or by anticipating demand too far in advance of its realisation. In the absence of detailed long-term investment plans, it is difficult to make any sort of precise estimate of the financial requirements, but it is expected that these will average around K2 million per year or a total of K20 million over the decade.

7 Conclusion

7.1 Despite the major improvements in recent years, there are obvious shortages and deficiencies in Malawi's transport and communications infrastructure; but while demand is high, funds are scarce. Care must therefore be taken to select projects on the right basis, using sound economic and engineering criteria, while ensuring sufficient capacity to meet the needs of agriculture and industry. Over-investment and duplication must be avoided. Maintenance, especially for existing transport facilities, is extremely important; it will be necessary to ensure that sufficient funds are available from recurrent revenues to maintain facilities before investment funds are committed in the three year "rolling" programmes. Strong financial policies such as the emergence of equitable and cost-based user charges are key elements in the efficient use of limited resources. Co-ordination of the different modes of transport will be maintained and improved. Above all, effective transport and communications investment planning depends critically upon the soundness of national economic and development strategies and on its ability to contribute to national development objectives.

Chapter V

Industry and Trade

This chapter will consider the development prospects for manufacturing, construction, power and water supply industries, the distributive trades and Malawi's internal and external trading position.

1 Manufacturing Industry

1.1 Past Performance

1.1.1 As is to be expected in a predominantly agricultural economy, a large part of Malawi's manufacturing activities is concerned with the processing of primary commodities. For convenience, these will be termed "supply-based" industries since they came into being in response to the availability of domestic supplies of produce which required or were amenable to industrial processing. Industries which came into being to meet domestic demand for their products will be termed "demand-based".

TABLE V.1: NET OUTPUT AND EMPLOYMENT IN LARGE-SCALE INDUSTRY 1964-1969

	1964	1965	1966	1967	1968	1969
<i>Supply-based Industries:</i>						
Net Output—K mn.	2.8	3.3	4.2	3.9	4.3	4.3
%	50	46	39	34	27	23
Employment—'000s	6.4	6.7	7.6	8.5	8.8	8.2
% of total	58	56	52	51	47	41
Net Output per worker K	364	486	556	463	486	524
<i>Demand-based Industries:</i>						
Net Output—K mn.	2.8	3.8	6.4	7.5	11.5	14.2
% of total	50	54	61	66	73	77
Employment—'000s	4.7	5.3	6.9	8.2	10.0	11.8
% of total	42	44	48	49	53	59
Net Output per worker K	599	713	937	923	1,151	1,201
<i>All Industries:</i>						
Net Output—K mn.	5.6	7.1	10.7	11.5	15.7	18.4
Employment—'000s	11.1	12.0	14.5	16.6	18.7	20.0
Net Output per worker K	508	587	737	689	840	920

Source: National Statistical Office, Annual Survey of Economic Activities 1969, Table 20 (adjusted).

N.B. Totals differ from figures for "Large-scale" in Table V.2, due to the fact that ASEA is based on financial years of reporting firms, not calendar years.

1.1.2 Before Malawi achieved political Independence in 1964, there were few industries outside the supply-based category. Total net output in that year was K12.1 million, of which K4.4 million or 36 per cent was produced in the non-monetary sector by processing maize, groundnuts, fish and other commodities for personal consumption. Of the remaining K7.7 million, over half took the form of produce processing, mainly tea and tobacco, and some 30 per cent was contributed by small firms employing less than 20 workers. At that time demand-based industries were confined to cigarettes, soft drinks,

blankets, clothing, soap and edible oil and a little light engineering, with the consequence that imports of consumer goods accounted for half of total imports and nearly a third of private monetary consumption.

1.1.3 During the first five years of Independence rapid growth was achieved in the output of demand-based industries, with both the introduction of industries not previously operating in Malawi, such as cotton textiles, brewing and distilling, agricultural implements and domestic hollow-ware; and with the expansion of existing industries, such as cigarettes, soap and edible oils and blankets. At the same time, the expansion of agricultural production led to considerable increases in the value of work done by industries engaged in processing commodities.

1.1.4 The growth in net output of industries covered by the Annual Survey of Economic Activities—i.e. all establishments employing 20 or more workers—is shown in Table V.1 and Graph V.1. The overall rate of growth has been phenomenal, averaging nearly 27 per cent a year at current prices, and the growth of demand-based industries has been even more rapid at nearly 40 per cent a year. Such rapid growth rates arose from the low base from which they are measured; but, although the *rate* of growth is bound to decline in future, there is no reason to predict any fall in the *absolute* annual increments of approximately K3 million.

1.1.5 In addition to the activities covered by the ASEA, there is a considerable volume of manufacturing output from smaller establishments which enhances the total value of output produced by manufacturing industry in the monetary sector of the economy. Furthermore, the non-monetary or subsistence sector also engages in manufacturing-type operations and, until the major upsurge in demand-based industries took place, the value of "subsistence manufacturing" was estimated to be more than half the value in the monetary sector. Details of the estimated contribution to GDP of the manufacturing sector for the period 1964–70 are given in Table V.2. This shows that manufacturing industry's contribution to GDP at factor cost rose from 10.4 per cent to 16.8 per cent in the monetary sector and from 8.3 per cent to 12.5 per cent overall. Measured in current prices, the figures indicate a growth rate of 19 per cent per annum compound in the monetary sector and 17½ per cent in total. In real terms (i.e. at constant prices) the rates would be somewhat lower but certainly not below 13 and 11½ per cent respectively.

TABLE V.2: MANUFACTURING INDUSTRY 1964–1970 (NET OUTPUT)

	1964	1965	1966	1967	1968	1969	1970
<i>Output in Monetary Sector:</i>							
Large-scale—K mn.	5.3	6.7	9.7	11.3	14.0	17.5	21.1
% of GDP ²	7.1	7.5	9.4	10.1	11.6	12.7	13.7
Small-scale—K mn.	2.4	3.3	3.7	4.2	3.5	4.0 ¹	4.7 ¹
% of GDP ²	3.3	3.6	3.6	3.8	2.9	2.9	3.1
Total —K mn.	7.7	10.0	13.4	15.5	17.5	21.5	25.8
% of GDP ²	10.4	11.1	13.0	13.9	14.5	15.6	16.8
<i>Output in Non-Monetary Sector:</i>							
K mn.	4.4	5.3	5.5	6.2	6.3	6.1	6.1
% of GDP ²	6.1	6.5	6.1	6.8	6.8	6.5	6.0
<i>Total Output:</i>							
K mn.	12.1	15.3	18.9	21.9	23.8	27.6	31.9
% of GDP ⁴	8.3	8.9	9.8	10.9	11.2	11.9	12.5

Source: NSO, National Accounts Report 1964–68, GDP by Industrial Origin 1964–70, Revised Series, and EPD estimates.

¹Provisional estimates (EPD).

²Monetary GDP at factor cost at current prices.

³Non-monetary GDP at factor cost at current prices.

⁴Total GDP at factor cost at current prices.

1.1.6 Although this rapid rate of growth has come about largely through the establishment of import substitute industries and the growth of domestic demand, there has also been a noticeable increase in exports of manufactures in recent years. The principal items for 1968-70 are shown in Table II.9 with 1964 figures also given for purposes of comparison. It will be seen that exports of manufactures almost doubled between 1968 and 1970, having more than doubled between 1964 and 1968. The total volume of manufactured exports in 1970 was still small in relation to the total value of domestic exports and tiny in comparison to the gross output of manufacturing industry, but already represents a useful addition to Malawi's national income and foreign exchange earnings.

1.1.7 It is clear from the above that Malawi has already achieved considerable success in developing the manufacturing sector of the economy from the very small base existing in 1964. Before considering the possibilities of growth during the coming decade it will be useful to review the policies which have been followed during the past six years, since these have undoubtedly contributed to the buoyancy of this sector.

1.2 Industrial Policy

1.2.1 The basic objectives of the Malawi Government's industrial development policy are to complement its programme in the natural resources sector by expanding the range of economic activities, providing additional income and employment opportunities and relieving pressure on the balance of payments caused by the need to increase imports of capital goods as the rate of development accelerates. This expansion is being brought about by creating additional value added in exports of primary products and by replacing imports with domestic manufactures. It will be immediately apparent that this is not an "industrialise at all costs" policy: on the contrary, the touchstone of success for this policy is the ability of domestic industry to produce at internationally competitive prices.

1.2.2 It is recognised that in a newly-industrialising country some additional assistance is required by manufacturing industry to enable it to make a start and realise its potential economic benefits. For this reason a limited amount of protection has been granted through the customs tariff, though in many cases this has amounted to no more than a continuation of existing "revenue" rates of duty. At the same time, the grant of tariff protection is usually made conditional on a formal undertaking by the protected firm not to raise prices without prior consultation with Government. This has had a most salutary effect in restraining the inflationary impact of industrial protection and, in particular, in preventing the terms of trade from moving against workers in the agricultural sector who find it more difficult to compensate for price increases than would urban wage earners.

1.2.3 The emphasis in Malawi's economic strategy on the maintenance, as far as is practicable, of price stability (whose implications are discussed more fully elsewhere) also dictates the use of tariff protection rather than direct quantitative controls for stimulating industrial development. A tariff can be set at a level which only provides effective protection as long as locally produced goods are of internationally competitive quality and are sold at competitive prices. These automatic safeguards would be lost under a system of quantity controls. This would require the erection of a cumbersome apparatus of price and quality controls which not only distorts relative prices but would be beyond the present capacity of Malawi's administration. Hence, except for a few basic foodstuffs for which demand is highly inelastic with respect to price and hence not suitable subjects for tariff protection, the Malawi Government has avoided the use of quantitative controls.

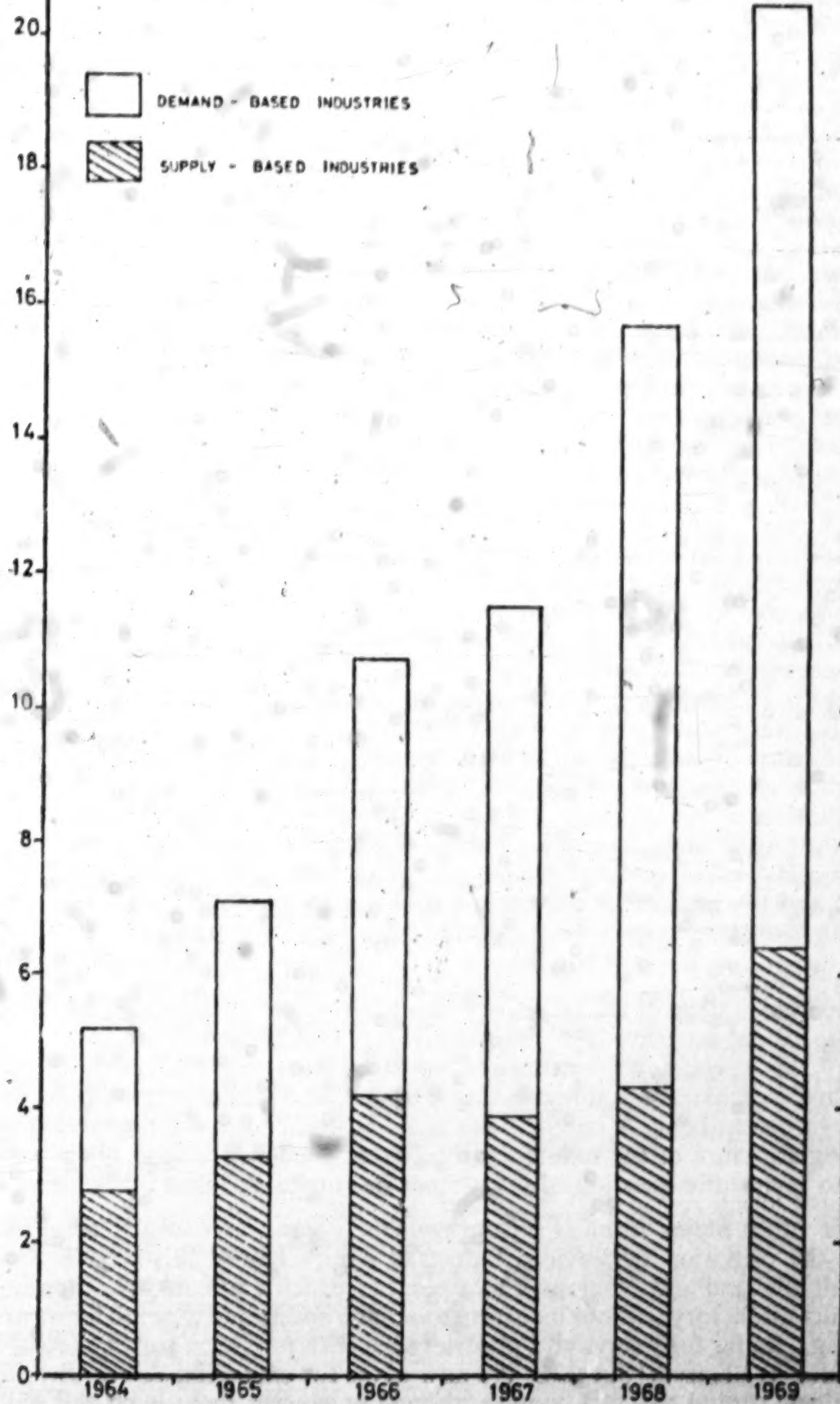
1.2.4 A particularly effective system of protection for certain types of commodities has been found in the device known as duty quotas. Under this system, two levels of duty are set, the standard or revenue rate and, at a higher level, the protective rate. Importers qualify for quotas at the standard rate of duty on the basis of the size of their purchases from local manufacturers, up to a certain level. There is no restriction on imports above this level, but these bear the protective rate of duty. This device has proved especially effective in the case of cotton textiles, to the extent that the local textiles industry has been hard pushed to satisfy demand, despite frequent increases in capacity, and traders have never found it necessary to exceed their duty quotas on imports.

GRAPH V.1

NET OUTPUT OF MANUFACTURING INDUSTRIES 1964 - 1969

Kmn.

(Source: National Statistical Office, Annual Survey of
Economic Activities, 1969, Table 20)



1.2.5 In one respect the policy of promoting demand-based industries has proved too successful since, with the decline in imports of consumer goods revenue from customs duties, one of the principal sources of Government revenue, failed to keep pace with Government expenditure. Although traditionally excise duties have been imposed on drinks, cigarettes and other non-essential consumer goods, this form of taxation would not have been suitable for the general run of manufactures and it was decided to impose a "surtax" equally applicable to both imports and domestic products. This has proved an extremely buoyant source of revenue and has the advantage of leaving unchanged the absolute levels of protection.

1.2.6 No major changes are envisaged in the general policy of industrial protection during the coming decade, but with a wider range of manufacturing industries now operating in Malawi, some of which are well entrenched, the levels of protection will be kept under constant review. At the same time, more attention will be paid to discrepancies between nominal and effective levels of protection, in order to ensure that more encouragement is given to operations with the greatest domestic value added content.

1.2.7 In addition to protection, manufacturing industry is also assisted through the grant of industrial rebates, the general structure of the customs tariff and the system of initial and investment allowances. As a general rule, customs duties on capital goods and intermediate products are kept at zero or nominal rates, but in some cases duties are imposed for revenue reasons on multi-purpose items which are rebated when goods are imported by genuine manufacturers in accordance with laid down procedures. Duties paid on component parts of manufactured exports automatically qualify for duty drawbacks as long as proper arrangements have been made with the Controller of Customs and Excise.

1.2.8 The Malawi Government has set its face against granting full "tax holidays" as a means of encouraging industrial investment, since all the evidence available from countries which have resorted to this device indicates that the cost to governments in loss of revenue is out of all proportion to the additional investment they attract. In Malawi's case, where short-run revenue constraints are especially severe, even a relatively large long-run benefit could fall short of the short-run cost when standard discount factors are applied. However, it is recognised that, just as new industries justifiably require some degree of protection against imports, so do they also need some initial relief from direct taxation, even though the present level of company tax at 40 per cent of taxable income is not high by world standards. Accordingly, the Income Tax Regulations make provision for initial and investment allowances on new fixed capital formation, as well as the usual depreciation allowances. The effect of these varies according to the degree of capital-intensity of production and the level of profitability, but in a standard case they result in something over half an industrial undertaking's profits being tax-free during the first five years of operation.

1.2.9 One disadvantage of the present system of investment allowances is that it tends to favour more capital-intensive types of operations. It is extremely difficult to assess what effect, if any, this has had on the pattern of industrial investment, but in view of the importance attached to maximising domestic value added and employment opportunities, this could be regarded as being in conflict with Malawi's general development strategy. With the changing structure of the manufacturing sector predicted below, it will probably be necessary to review the question of investment incentives early on in the decade.

1.2.10 The other major form of encouragement offered to manufacturing industry in Malawi is the provision of serviced industrial sites. Under this scheme Government acquires suitable land and develops it to a point at which a private investor can take over and construct his factory without incurring too much additional expense by way of clearing and levelling. So far fully serviced industrial sites with provision for rail access have only been provided in Blantyre, but there are now plans for extending this service to Liwonde and to the new capital city at Lilongwe, though at present there is no rail link north of

Salima (see Chapter IV). No specific provision has so far been made to meet the needs of small-scale Malawian-owned industries and the desirability of Government providing special facilities to encourage this type of development is now being considered.

1.2.11 It is implicit in the preceding paragraphs that the greater part of investment in manufacturing industry in Malawi has come from the private sector and that, in view of the low level of industrial activity prior to 1964, most of the required finance has had to come from external sources. During recent years, however, the degree of local participation in industry has been greatly increased through the activities of the Malawi Development Corporation and the growth of indigenous enterprise. At the same time, an expanded industrial sector has become able to finance more of its new investment from accumulated profits. Furthermore, the Malawi Government is now more conscious of the need to ensure that private sector operations are consistent with national development strategy, as evidenced by the decision taken in 1970 to use the Industrial Development Act to promote industrial development in Lilongwe.

1.2.12 These trends will be continued during the coming decade. For example, while no change is expected in the policy of allowing full repatriation of interest and dividends on foreign capital, the relative flows of investment income payments and new capital inflows will be kept under close surveillance. Similarly, the degree to which foreign-controlled enterprises are allowed to raise loans on the local market will be kept under review. It is also feasible that more direct influence will need to be brought to bear on the location of new industries, to ensure that this fits in with the general objective of geographical diversification. Finally, Government is finding it increasingly necessary to enter itself into industrial production, either directly as in the case of the Forest Industries Division of the Ministry of Agriculture and Natural Resources, or indirectly in the form of wholly-owned subsidiaries of parastatal bodies such as ADMARC and MDC. Furthermore, there has also been a trend towards the acquisition of minority holdings in private firms—all aimed at increasing the degree of Malawian participation in the industrial and other sectors. So far the Malawi Government has eschewed the policy, common in some developing countries, of stipulating the minimum level of local participation acceptable in joint ventures with foreign investors, but it is clearly necessary to take such steps as may be appropriate to ensure increasing local control over the economic life of the country. How this is done will depend on the situations which arise and cannot be forecast in detail in advance. The position will be kept under review by Government to ensure that national objectives are achieved.

1.3 Future Projections

1.3.1 Turning to the future, the pattern of industrial development during the next quinquennium will differ significantly from the type of growth experienced between 1964 and 1970, at least with respect to demand-based industries. Whereas the main expansion in the past has come from major investments in new activities which were either not performed in Malawi at all or only on a very small scale, most of the opportunities for large new ventures in demand-based industries have now been taken up. Thus during the past year or so new investment in manufacturing has tended to take the form of additions to existing activities or relatively small new undertakings—relative that is to earlier major projects such as textiles, brewing and sugar refining. There is no reason to expect any significant departure from this recently established pattern during the next few years, but the greater volume and diversity of the industrial sector itself carries promise of ever-increasing incremental growth.

1.3.2 Supply-based industries can be expected to grow more rapidly in view of the projected expansion in output of primary commodities outlined in Chapters II and III, especially in view of the greater weight which is being given to crops which require a considerable degree of industrial processing such as cotton, rice, tea and tobacco. For the second quinquennium (1976–80) supply-based industries will come into their own with the almost certain establishment of pulp and paper production based on the Vipya forests, the rise of timber processing as greater quantities of construction grade timber become

available and the likely introduction of other types of timber products such as laminated and finger-jointed beams and mosaic parquet. In addition, the possibilities of processing the 60 million ton bauxite deposits on Mulanje Mountain are already being actively explored. If these can be brought to fruition, they would more than double the figure for manufactured exports projected in Chapter II and revolutionise Malawi's economy.

1.3.3 Projections of the likely course of net output by large-scale manufacturing industry are shown in Table V.3, and for the whole manufacturing sector in Table V.4. The rapid increase in output by supply-based industries between 1975 and 1980 reflects the effect of the pulp and paper industry which will come into production sometime during the second quinquennium. No allowance has been made for aluminium processing as this is still at the investigatory stage and not even tentative figures are at present available. The projections for demand-based industries allow only for steady expansion of existing types of industry in response to the increases in domestic income which will accrue from the rise in agricultural production and export earnings, with some allowance made for increased exports of manufactures as shown in Chapter II. However, the main increase in exports is in the supply-based sector and, especially, from the pulp and paper industry.

TABLE V.3: PROJECTIONS OF NET OUTPUT BY LARGE-SCALE INDUSTRY

	1965	1970 ¹	1975 ²	1980 ²
<i>Supply-based Industries:</i>				
Net Output—K mn.	3.1	5.0	8.0	21.0
% of total	46	24	24	33
Employment—'000s	6.7	8.2	10.0	16.8
% of total	56	39	36	39
Net Output per worker—K	463	610	800	1,250
<i>Demand-based Industries:</i>				
Net Output—K mn.	3.6	16.1	26.0	42.0
% of total	54	76	76	67
Employment—'000s	5.3	12.8	18.0	26.3
% of total	44	61	64	61
Net Output per worker—K	679	1,258	1,444	1,600
<i>All Industries:</i>				
Net Output—K mn.	6.7	21.1	34.0	63.0
Employment—'000s	12.0	21.0	28.0	43.6
Net Output per worker—K	558	1,005	1,214	1,460

Notes: ¹Estimated (EPD) and adjusted to calendar year basis.

²Projected.

TABLE V.4: PROJECTIONS OF INDUSTRIAL OUTPUT

	1965	1970	1975	1980
<i>Output in monetary sector:</i>				
Large-scale—K mn.	6.7	21.1	34.0	63.0
Small-scale—K mn.	3.3	4.7	6.0	10.0
Total—K mn	10.0	25.8	40.0	73.0
% of monetary GDP	11.1	17.0	16.5	17.9
<i>Output in non-monetary sector:</i>				
K mn.	5.3	6.1	7.0	8.0
% of non-monetary GDP	6.5	6.0	6.0	6.1
<i>Total Industrial Output:</i>				
K mn.	15.3	31.9	47.0	81.0
% of GDP	8.9	12.6	13.1	15.0

Note: Sources for 1965 and 1970 and definitions same as for Table V.2.

1.3.4 The manufacturing sector as a whole is projected to grow from a net output of K31.9 million in 1970 to K81 million in 1980, a growth rate of just under 10 per cent a year compound. Most of this growth will come from the large-scale sector, but a relatively large, though absolutely small, rate of increase is projected for the small-scale sector since there will be increased opportunities for small-scale Malawian industries, especially those serving the agricultural community, as rural development proceeds. In the non-monetary sector it has been assumed that the value of industrial processing will keep pace with the growth in population, now estimated at 2½ per cent a year. Applying the projections of total industrial production to the national income forecasts in Chapter IX, this sector's share of GDP at factor cost is expected to rise over the decade from 12.6 per cent in 1970 to 13.1 per cent in 1975 and 15 per cent in 1980. Manufacturing's share of monetary output will rise rather less rapidly to nearly 18 per cent in 1980. (The high share of manufacturing of monetary GDP in 1970 arose from the reduction in agricultural output caused by the poor growing season).

1.3.5 The projected rate of growth in industrial employment is considerably less than the growth in output, since it would be unreal not to expect further increases in labour productivity. These will be particularly marked in the supply-based sector with the introduction of the capital-intensive pulp and paper industry and of more sophisticated methods of produce processing. Only small increases in labour productivity have been posited for demand-based industries, so that overall labour productivity is expected to rise from K1,005 in 1970 to K1,214 in 1975 and K1,460 in 1980. Only rough estimates are available for employment in the small-scale sector, but there is no reason to assume any significant changes in capital-intensity or labour productivity in this field.

TABLE V.5: PROJECTED CAPITAL REQUIREMENTS OF MANUFACTURING INDUSTRY 1971-1980 (K mn.)

	1971-75	1976-80	1971-80
Large-scales: Supply-based	4.5	26.0	30.5
Demand-based	15.0	24.0	39.0
Total	19.5	50.0	69.5
Small-scale:	0.7	2.0	2.7
Total industry (monetary sector)	20.2	52.0	72.2

1.3.6 It remains to consider the amount of new investment required to achieve the projections in Table V.4 and the likelihood of this being forthcoming. Between 1964 and 1969 the ratio of gross fixed capital formation in the large-scale sector to the increase in net output—i.e. the Incremental Capital-Output Ratio (ICOR)—was 1.32 and was roughly equal to the Average Capital-Output Ratio in 1969. Some general increase in ICORs is to be expected and an average figure of 1.5 is assumed for all large-scale industry up to 1975 and for demand-based industry up to 1980. For supply-based industry a higher ICOR must be postulated, in view of the introduction of the pulp and paper project, and an ICOR of 2 is assumed for supply-based industry between 1975 and 1980. Applying these ratios to the net output figures in Table V.4 gives a total capital requirement for direct investment in large-scale manufacturing of K69.5 million and an overall ICOR of 1.66. No data are available on capital-output ratios in small-scale industry. A figure of 0.5 seems intuitively reasonable and it is assumed that this will remain constant, giving a total capital requirement for the small-scale industrial sector of K2.7 million for the decade. These figures are summarised in Table V.5. They exclude any infrastructure investment which may be required of Government in support of industrial development, which is included in the projections of public sector investment in Chapter VIII.

1.3.7 Taking a round figure of K70 million as Malawi's investment requirements for manufacturing industry during the coming decade, approximately K20 million of this will

be needed in the first quinquennium and K50 million in the second. Net additions to industrial capital of the order of K4 million a year up to 1975 are therefore being sought, which is less than gross capital formation in industry in recent years. Thereafter the figure will rise to around K10 million a year, but these are still relatively modest sums and should easily be forthcoming from a mixture of accumulated reserves and new foreign borrowing, bearing in mind the policies outlined in section 1.2 of this Chapter.

2 Building and Construction

2.1 Output in the building and construction industry is, of course, largely determined by the level of gross fixed capital formation. Total investment in Malawi has risen from K11 million in 1964 to K49 million in 1969 and 1970, excluding the non-monetary sector, but a relatively high proportion of this has been in the form of plant and equipment and net output in the construction sector has risen somewhat less rapidly, from K3.3 million in 1964 to a high point of K8.6 million in 1969, dropping slightly in 1970 to K8.5 million. Investment in Malawi is dominated by the public sector, which includes both the Government itself and statutory bodies. During the 1964-1970 period, public sector investment accounted for 54 per cent of gross fixed capital formation and a substantial proportion of building and construction activity was carried out by Government directly, both by the Ministry of Works and Supplies and by other departments such as Forestry.

2.2 In the private sector the construction industry operates at three levels. For very large projects it is usually necessary to employ foreign-based contractors whose domestic value added is relatively low since a substantial part of their earnings is repatriated to their countries of origin. At the intermediate level there are a number of local firms capable of carrying out medium-sized projects and assisting foreign contractors with major commissions. These firms are usually controlled by expatriates resident in Malawi, but their shareholding tends to be domestic rather than foreign and the income "leakage" is accordingly less. Finally, there are small Malawian-controlled firms whose activities are largely confined to small private commissions.

2.3 By 1975 gross fixed capital formation in the monetary sector should be running at around K60 million a year, rising to about K95 million by 1980. Net output in the building and construction industry will probably rise relative to GFCF with the large share of investment which will be taken up by roads and buildings during the next quinquennium, but fall thereafter as increased expenditure is devoted to plant and equipment. It therefore seems reasonable to predict a growth of just under 50 per cent from K8.5 million in 1970 to K12 million in 1975, rising to nearly 60 per cent to give a net output of K19 million in 1980.

2.4 This is equivalent to an annual growth of just over 8 per cent, slower at the beginning and faster at the end of the decade. In principle, it can be safely assumed that, provided finance is available for the level of investment on which these projects are based, there should be no difficulty in achieving these growth rates by bringing in foreign-based contractors. However, this would be contrary to Malawi's basic economic policy of increasing local participation and ensuring that people throughout the country at all levels of income share in the fruits of economic development. It will therefore be necessary to increase the share of domestic contractors in building and construction, but there is already evidence of manpower constraints at the higher and intermediate levels of skill. Thus, while there is no danger of the construction industry failing to meet the needs of the development programme, it will not make its full contribution to all-round development unless the manpower policies outlined in Chapter VI are successfully implemented.

3 Power and Water

3.1 Power

3.1.1 Demand for electric power has grown rapidly since Independence, due largely to the growth of manufacturing industry and the increased use of irrigation in agriculture. The number of units sent out has risen from 42.7 million KWH in 1964 to 131.7 million

KWH in 1970, an average rate of growth of nearly 21 per cent a year. Peak load has risen somewhat less rapidly, from under 9 MW to over 22 MW, an average growth rate of 16 per cent a year, and has necessitated major increases in installed capacity.

3.1.2 Even before 1964 it was apparent that the future development of power supplies in Malawi lay with hydro-electric generation and one of the first major projects embarked upon by the Malawi Government was the Nkula Falls Hydro-Electric Scheme, the first stage of which came on stream in time for the assumption of Republican status in 1966, with an initial capacity of 16 MW. Since then a further 8 MW has been added to Nkula and a second scheme is being developed at Tedzani. This will also have an initial capacity of 16 MW, but is designed to be increased to 48 MW in two successive phases by 1980. In addition, steps are being taken to extend the transmission of hydro-power with a line up to Lilongwe. Other parts of the Central and Southern Regions will be incorporated in the national grid during the decade.

3.1.3 The previous analysis of the likely future course of industrial development in Malawi suggests that the rate of growth in demand for electric power will be less in the 1970s than it was in the 1960s. Accordingly, a growth rate of approximately 10 per cent a year has been projected for the coming decade, as shown in Table V.6. This will call for an average annual investment of around K3 million, concentrated in the period 1971/3, and of around K2.5 million a year in the second half of the decade, concentrated towards the end of the period.

TABLE V.6: PROJECTIONS OF ELECTRICITY GENERATED 1965-1980

	1965	1970	1975	1980
Units generated (Kwh mn.)	52.4	131.7	227	373
Annual average growth rate—per cent*	10.5	20.5	11.6	10.5

*On previous five years.

3.1.4 The figures quoted above make no provision for additional power demands likely to arise from the implementation of the Vipya pulp and paper scheme or the Mulanje bauxite scheme. These will, of course, both involve very large volumes of power consumption, but at present no firm estimates are available. For the Vipya additional supplies will be made available by exploiting the considerable hydro-electric potential of the rivers in the Northern Region; for the bauxite, a multiple of existing capacity will be needed if it is decided to process it to refined aluminium. This will be provided either by major extensions to hydro-electric capacity on the Shire River, which has a potential of between 500 and 1,000 MW, or by purchases from the Cabora Bassa scheme on the Zambezi in Mozambique, now in the course of construction. However, as mentioned above, no firm planning can be started for bauxite development until preliminary studies have been completed.

3.2 Water and Sanitation

3.2.1 The need for reticulated sewage systems is at present confined to the urban centres of Blantyre and Lilongwe, but water supplies are needed in both urban and rural areas. Rural water supplies mainly take the form of boreholes and wells and there has been a considerable increase in the number of boreholes provided in recent years. The borehole programme will continue, but increasing numbers are already posing administrative and maintenance problems. Plans for an improved organisational structure, better designed to deal with these problems, are already under discussion and are expected to be implemented early in the decade.

3.2.2 Lilongwe is adequately supplied with water from the Kamuzu Dam, completed in 1968, which has a capacity sufficient to supply up to 9 million gallons a day, more than is expected to be needed by 1980. Blantyre, however, is in a different position and, being situated on relatively high ground, finds water expensive to obtain. Although maximum use is made of local catchment areas, the main supply for Blantyre is pumped from Walker's Ferry on the Shire River over a distance of 23 miles rising 2,500 feet. The total investment in the scheme has amounted to some K5.3 million and the present capacity of

4 million gpd has almost been reached. Further additions to the pumping and treatment plant are planned, to utilise the full capacity of the existing pipeline (8 million gpd) and also to extend local resources. These additions will involve a further investment of around K1 million over the next five years. Thereafter major additions to the system will be required and consideration is now being given to making use of catchment areas between Blantyre and the Shire River as an alternative to the original concept of installing a second line and additional pumping capacity for Walker's Ferry. Thus there will probably be a need for a further K7 million to be invested in Blantyre's water supplies between 1975 and 1980.

3.2.3 These estimates are based on the assumption that the future demand for water in Blantyre will follow a similar course to the demand for power, discussed above. Between 1965 and 1970 average daily output and peak 30 day demand rose by more than 16 per cent a year. For the future it has been estimated demand will grow by about 10 per cent a year, bringing average daily output to just under 10 million gpd by 1980 and peak 30 day demand to nearly 12 million gpd.

3.2.4 The rapid growth in population in Blantyre and the expected growth in Lilongwe call for a major improvement in the provision of sewerage facilities. Reticulated sewerage is an expensive undertaking, but the economic cost of not providing adequate facilities can be enormous, in view of the serious health hazards of inadequate sanitation. Accordingly, considerable sums have already been invested in the Blantyre sewerage scheme, with plans for further extensions, and comparable sums will be required for Lilongwe well before the end of the decade.

4 Trade

4.1 Internal Trade

4.1.1 Internal trade forms an integral part of Malawi's economic structure, since among its prime functions are the collection and marketing of agricultural produce and the supply of farm inputs and consumer goods to the rural areas. Unless these functions are performed efficiently, the export and production projections set out in Chapters II and III will not be achieved. Furthermore, it has been shown in Chapter III that, although Malawi is expected to produce adequate supplies of basic foodstuffs, principally maize, to meet national demand, there will be surpluses in some parts of the country and deficits in others. An efficient trading network is the only way of ensuring that the demands of maize deficit areas are satisfied and, as shown subsequently, the maintenance of adequate food supplies is a prerequisite of general price stability. It is also important to ensure that supplies of consumer goods are made available in rural areas to meet the expected increase in farm incomes, since without easy access to goods on which to spend their higher earnings, farmers will be reluctant to put in the considerable amount of extra work which will be needed if the agricultural output projections are to be realised.

4.1.2 Institutionally, the marketing system for agricultural produce is divided between smallholder and estate agriculture. Virtually all crops grown by smallholders are purchased by the Agricultural Development and Marketing Corporation (ADMARC), formerly known as the Farmers' Marketing Board. This operates along lines which have become standard for most produce marketing boards in Africa, buying produce at fixed prices either through its own markets or through licensed buying agents. Minimum prices are normally announced at planting time and maintained constant throughout the produce season, to enable growers to adjust their planting programme to profitability requirements. ADMARC arranges for collection, transport, storage, grading, processing where necessary and final sale, the main products handled being maize, groundnuts, rice, pulses, cotton and fire-cured and sun-cured tobacco. The Corporation operates a price stabilisation fund and endeavours to minimise price changes to growers from one season to the next, within the constraints imposed by movements in world market prices. (See Chapter III, Section 6.6, for a fuller discussion of crop pricing policy.)

4.1.3 The change in title from Farmers' Marketing Board to Agricultural Development and Marketing Corporation signalled the increased recognition now being accorded to the need for the organisation to concern itself with the general development of smallholder agriculture, instead of concentrating solely on produce marketing. In practice, the old FMB had for some time been engaged in supplying farm inputs and had participated in development projects, so that the change in name signified a shift in emphasis rather than in direction. It remains to be seen how far this can be effectively implemented and, in view of the requirements for additional capital to finance development projects, consideration is now being given to the creation of a separate subsidiary body which will be in a position to accept non-Government finance and able to concentrate on development activities.

4.1.4 Furthermore, the sheer size of the task of purchasing and handling the volumes of produce expected to be forthcoming cannot be over-emphasised. In recent years the tonnages handled by the FMB have been of the order of 150,000 to 200,000 short tons a year. The crop projections for 1975 and 1980 indicate that these tonnages will rise to around 285,000 and 650,000 short tons respectively, implying that over the next ten years the volume of small-holder production will be roughly trebled. It seems likely that the physical task of buying, moving, processing and handling this volume will stretch ADMARC's resources to capacity. It will also impose a considerable strain on internal transport facilities, a subject discussed in more detail in Chapter IV.

4.1.5 Parallel to the system for buying smallholders' crops, the Government has set up and is developing further a chain of official cattle markets throughout the country, linked by trek routes, night *kholas* and holding-grounds. The Cold Storage Company acts as a guaranteed residual buyer, on whose behalf Government officers buy cattle as their agents. The provision of markets for buying cattle at guaranteed minimum prices for weight and grade is an essential step in the process of livestock development in the country. There is also a very considerable internal trade in fish, amounting to an estimated 40,000 tons a year. However, apart from a small number of commercial fishing enterprises operating on lake Malawi, the vast majority of this internal trade is carried out by small local traders, using a wide variety of means of transport. At present such traders provide the best means of supplying fish to the main areas of consumption in the south and the lakeshore hinterland, but some assistance from Government may prove desirable in the future.

4.1.6 A number of crops are not suitable for smallholder production, viz. tea, flue-cured Virginia and Burley tobacco and sugar, and these are grown and marketed by estates. Until recently these were all privately owned and financed, mainly by expatriates, but in accordance with the policy of increasing local participation, a number of tobacco estates have been opened up under Malawian ownership and Government has introduced a scheme for Malawian tea growers under the Smallholder Tea Authority. Government provides assistance as required with external marketing, as outlined in section 4.2 below.

4.1.7 Merchandise trading in Malawi has traditionally been controlled by a small number of European agents and wholesalers, who also dominated the urban retail trade, and a somewhat larger number of Asian wholesalers and retailers. Here again the structure of this sector of the economy was at variance with the basic objectives of economic policy and Government has moved in a number of ways to increase the degree of local participation. This has been done by restricting rural trading (i.e. outside recognised trading centres) to Malawians, by encouraging the growth of Malawian enterprises and by participating financially in foreign-owned trading concerns. More recently the Import and Export Company has been established under the aegis of the Malawi Development Corporation, which will be primarily concerned with improving distribution services in the rural areas by providing better wholesale facilities to Malawian traders, though it will also engage in agency business and urban trade. Up to now there have been obstacles to the ability of Malawian traders to seize fully the opportunities opened up for them in the field of rural trade; the IEC will help to overcome these, but it may also become necessary to provide additional technical assistance to small-scale traders if the consumer demands of the rural population are to be met adequately.

4.1.8 One of the most important aspects of Malawi's trade policy is the maintenance of price stability, an essential element in its longterm economic policy but one which has encountered a number of difficulties. The strongest pressure forcing up prices has come from inadequate supplies of basic foodstuffs as dramatically illustrated in 1970 when poor climatic conditions led to maize shortages and the foodstuffs section of the Low Income Index of Retail Prices rose from 106.5 in March 1970 to 127.0 in March 1971. The sensitivity of the index to harvest conditions was shown the following month when the new season's produce began to come forward and the index dropped in one month to 105.7, causing the All Items Index to drop from 114.2 to 104.8. The plans to raise agricultural productivity are thus an essential part of price stability, as is the maintenance of an efficient distribution system for basic commodities.

4.1.9 Prices are also affected by the unavoidable policy of relying on indirect taxation for the bulk of Government revenue, but it has been found that traders have tended to raise prices by more than the increase in taxation. This, together with the tendency to seek higher trade margins than are normal for the same classes of goods in more developed countries, stems from the scattered nature of a relatively low-volume market, with the consequent attenuation of unit turnovers and competitive pressures. Since under existing conditions market forces are insufficiently strong to eliminate quasi-monopolistic positions which traders can exploit, it has been found necessary to take administrative action to keep prices in check. To this end, Government has established a Price Control Board which, in conjunction with the Price Control Unit in the Ministry of Trade and Industry, will keep a close watch on price trends in general and take appropriate action in specific cases.

4.1.10 A common source of inflationary pressure, in both developed and less developed countries, is a general upward movement of wage rates. If such a trend were allowed to develop in Malawi the effect would be especially devastating, since it would turn the terms of trade against the majority of the population, the non-wage earners in the rural areas, and play havoc with plans for agricultural expansion. Malawi has thus committed itself to a policy of wage stabilization, discussed more fully in Chapter VI. There are therefore good grounds for reasonable confidence in Malawi's ability to maintain price stability.

4.1.11 It must, however, be acknowledged that further increases in internal prices will come about because of external factors, most notably through the impact of rising prices of imported goods and services. The projections in Chapter II explicitly assumed a deterioration in Malawi's terms of trade compared with the present position, following on the expected decline in unit prices of some key export commodities. Apart from this, the assumption underlying the general price forecasts is that any global price inflation will tend in aggregate to have the same impact on export as on import prices, thus leaving the terms of trade unchanged. This assumption is clearly heroic: but it would be even more heroic to claim to be able to forecast the course of global inflation and its differential effect on export and import prices for ten years into the future.

4.2 External Trade

4.2.1 The fundamental structure of Malawi's external trade can be described simply as the exchange of primary products, mainly agricultural, for manufactured goods. More recently we have seen the beginnings of an export trade in manufactures and this is expected to assume considerable proportions during the coming decade. Increased earnings from "invisible" exports, especially tourism, will also help to broaden the export base, but agricultural commodities will still form the base of Malawi's export effort. Details of past performance and projections to 1980 are given in Chapter II.

4.2.2 The pattern of import trade has changed markedly since 1964, both in terms of types of commodities and countries of origin, as shown in Tables V.7 and V.8. It will be noted that although total imports have grown by 75 per cent between 1965 and 1970, half the increase is accounted for by the rise in capital goods imports and two-fifths by intermediate goods, so that consumer goods rose by only 16 per cent. The relative stability of

consumer goods imports is further evidence of the success of the policy of demand-based industrialisation and the rise in capital goods imports is an index of the rapid build-up in investment. In consequence, although Malawi has consistently run a large negative balance of trade, it has been able to maintain its external reserves since capital goods imports are largely financed by foreign borrowing.

TABLE V.7: IMPORTS BY END-USE

	1965		1970		Inc- crease %
	K mn.	%	K mn.	%	
<i>Consumer Goods:</i>					
Durable	1.6		2.1		
Non-durable	9.8		10.9		
Motor cars and bicycles	2.0		2.5		
	13.4	33	15.6	22	16
<i>Capital Goods:</i>					
Operating machines	1.9		5.3		
Auxiliary equipment	1.6		3.7		
Vehicles n.e.s.	2.6		8.1		
Materials for building and construction	2.7		5.1		
Parts, tools and appliances	0.8		2.9		
	9.7	24	25.0	35	158
<i>Intermediate Goods:</i>					
Basic and auxiliary materials for industry	7.3		22.6		
Cloth for manufacture and consumption	6.5		3.2		
Oils, fuels and lubricants	1.6		3.6		
Other n.e.s.	1.6		N		
	17.0	42	29.4	41	73
<i>Miscellaneous items</i>	0.6		1.4		
Total Imports	40.8	100	71.4	100	75

Source: NSO: Monthly Statistical Bulletin, Trade Appendix, Table 3, April 1971.

4.2.3 During the past quinquennium there has been a marked shift in the geographical pattern of trade, following the abrogation of the Rhodesian Trade Agreement after UDI in November 1965. The move away from Rhodesian imports has been even greater than the figures in Table V.8 suggest, since in 1970 it was necessary to import maize from Rhodesia in view of the poor domestic crop. If this unusual item is excluded, the Rhodesian share drops to below 17 per cent. Part of the former Rhodesian share of imports has been taken up by Britain, but there has also been a tendency towards more widely diversified sources of supply. Whereas in 1965, 61 per cent of imports came from the two largest source, by 1970 this had dropped to 49 per cent. The greater diversity in import sources arises partly from the larger number of countries now supplying foreign capital to Malawi, but also from the greater awareness among Malawi importers of the advantage of shopping around. There is still plenty of scope for more imaginative buying by Malawi traders and Government is assisting these endeavours by extending the range of trade agreements to an increasing number of countries.

4.2.4 By the end of the decade Malawi's trading pattern will be very different from the present position in view of the impact of Britain's proposed entry into the European Economic Community. At present Malawi maintains a three-column tariff, with preferential rates for British goods, semi-preferential rates for other Commonwealth countries, Rhodesia and South Africa and higher rates for the rest of the world. In return, Malawi

enjoys preferential access to the British market for various exports, of which tobacco is the most important, and also to some Commonwealth countries and South Africa. Final details of the future position in Britain when that country joins the EEC are not clear, but it has been apparent for some time that it will be in Malawi's interest to seek some form of association with the EEC and steps are being taken to open negotiations. Consequent on these developments, it may also prove desirable or necessary to revise the structure of the Malawi customs tariff, but any such decision must await the outcome of negotiations with the EEC.

TABLE V.8: IMPORTS BY COUNTRY OF ORIGIN

	1965		1970		Change %
	K mn.	%	K mn.	%	
United Kingdom	10.3	25	19.0	27	+ 84
Rhodesia	14.9	36	15.5	22	+ 4
South Africa	2.2	5	9.0	13	+311
Japan	2.7	7	3.8	5	+ 37
Zambia	0.7	2	2.5	4	+246
United States of America	1.1	3	3.7	5	+240
West Germany	1.2	3	2.7	4	+130
Australia	1.1	3	1.3	2	+ 25
India	0.7	2	0.9	1	+ 14
Pakistan	0.4	1	0.8	1	+132
Hong Kong	0.8	2	0.9	1	+ 23
All Other Countries	4.8	12	11.3	16	+137
	40.8	100	71.4	100	+ 75

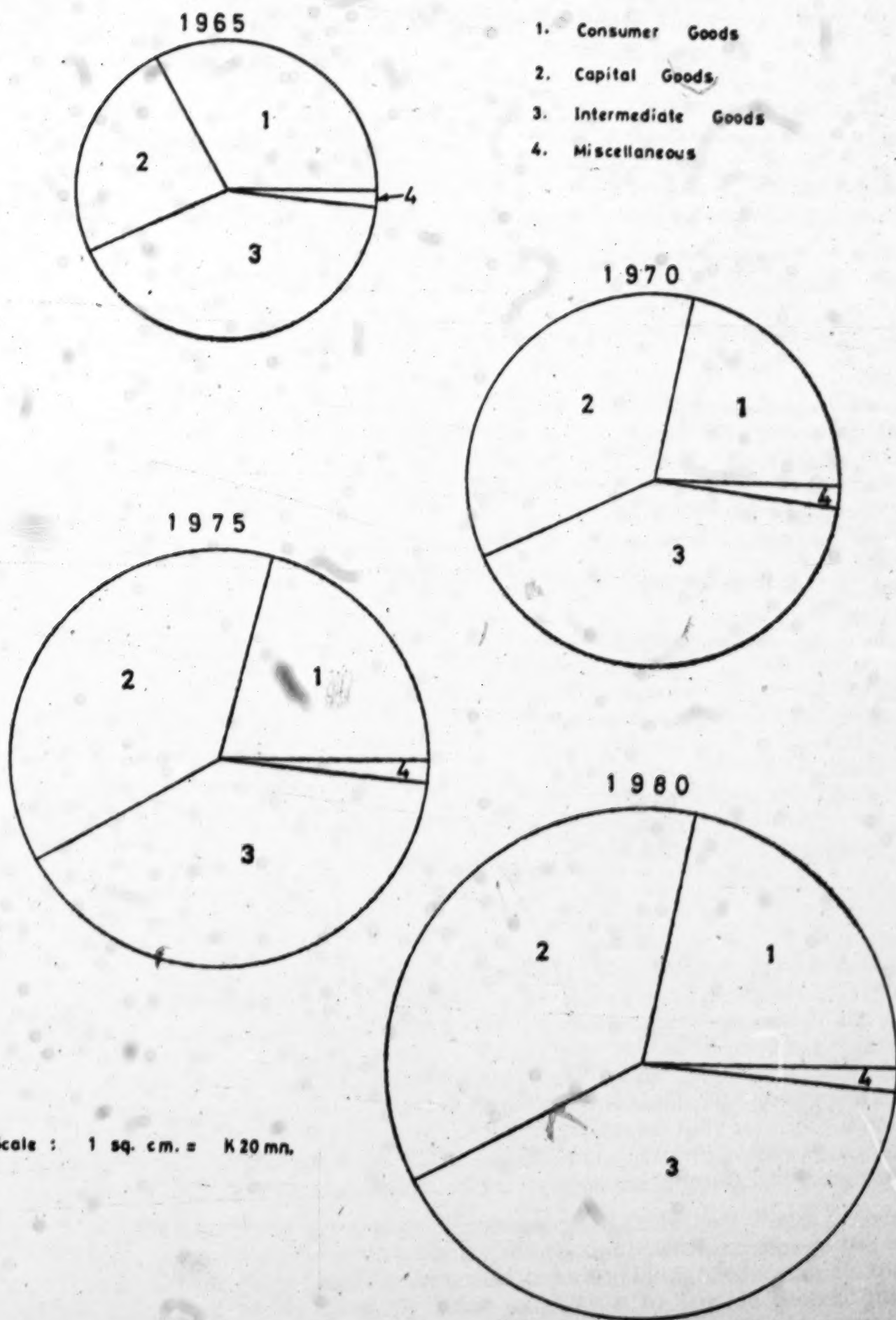
4.2.5 Independent of these developments, it will clearly be necessary to improve Malawi's selling effort to the rest of the world if the export projections outlined in Chapter II are to be secured. Accordingly, Malawi is stepping up its trade promotion activities, both by way of sales missions abroad and by participating in various trade fairs. In addition, an Export Promotion Council has recently been established which will co-ordinate efforts in this important field.

4.3 Import Projections

4.3.1 In the past there has been a close relationship between the level of fixed investment and imports of capital goods; thus the projected figures of GFCF given above provide an indication of the future level of capital goods imports. Similarly, the growth of manufacturing and transport has given rise to increased demand for imports of intermediate products, while the expansion of demand-based industries has led to a marked decline in the share of consumer goods in total imports. However, with the slower relative rate of growth expected in this sector of industry and the inevitable increase in demand for imported consumer goods as personal incomes rise, very little further reduction in the share of consumer goods in total imports can be expected, and it will probably start to rise again later in the decade. However, with the growth of intermediate demand-based industries, such as paper and packaging, there should be no increase in the share of intermediate goods in total imports. The cost of imports of non-factor services, mainly freight and insurance, is largely determined by the volume of visible trade, but it would be prudent to assume that this item will rise slightly faster than visible imports in view of the tendency towards increased freight rates.

Graph V.2

Imports by End-Use.



4.3.2 Projections based on these considerations are shown in Table V.9. For purposes of comparison, the export projections from Chapter II have also been included to enable the trade balance to be calculated. Little change is expected in the absolute size of the import surplus, though as a percentage of exports it drops from 66 in 1970 to 34 in 1975 and 22 in 1980.

TABLE V.9: IMPORT PROJECTIONS

	1970		1975		1980	
	<i>K mn.</i>	%	<i>K mn.</i>	%	<i>K mn.</i>	%
<i>Consumer Goods</i>	15.6	17	20	16	30	17
<i>Capital Goods</i>	25.0	27	35	28	48	27
<i>Intermediate Goods</i>	29.4	32	38	31	55	31
<i>Miscellaneous</i>	1.4	2	2	2	2	1
Total Goods	71.4	78	95	77	135	76
Non-Factor Services*	20.7	22	28	23	42	24
Total Imports	92.1	100	123	100	177	100
Exports:						
Goods**	47.5	85	79	86	123	85
N/F Services	8.1	15	13	14	22	15
Total Exports	55.6	100	92	100	145	100
Visible balance	-23.9	50†	-16	20†	12	10†
Import Surplus	36.5	66††	31	34††	32	22††

NOTES: *including balance-of-payments adjustment.

**including re-exports.

†percentage of visible exports.

††percentage of total exports.

Chapter VI

Manpower, Education and Training

1 Introduction

1.1 It has become almost a commonplace to recognise that the "manpower constraint" can be a crucial bottleneck in the achievement of rapid development in African countries. Given the very fast rate of development projected for the future in earlier chapters of this *Statement*, and an inherited educational system ill-equipped to meet the need of accelerated development, it is clear that the manpower bottleneck is potentially crucial for Malawi.

1.2 This chapter attempts first to identify these areas of manpower development which will be essential in overcoming the manpower constraint in the 1971-80 decade. In doing so, it adopts a broader and more realistic stance than does "traditional" manpower planning, which narrowly emphasises the almost exclusive importance of the occupational structure in the wage-economy.

1.3 The major needs in manpower development thus outlined, two sections then follow, describing in turn the manpower supply policies and the manpower utilisation policies that are designed to meet these needs. Manpower supply policies, involving the processes of education and training, are the instrument by which structural changes in the manpower situation can be effected. It is clearly recognised, however, that the educational system, by its nature, cannot be adapted to manpower needs very quickly, or, in some ways, very closely. This means that much of educational policy cannot be of direct developmental significance in the 1971-80 period. But because of the great size and importance of the educational sector, this chapter also examines educational policy as a whole, rather than examining simply its immediate economic role of overcoming the manpower constraint.

1.4 There is finally a section on manpower utilisation policies: these are the policies seeking to ensure the most effective use of all the manpower available. Although generally involving the commitment of few resources, utilisation policies are economically of very great importance in meeting manpower needs. On the one hand, the National Wages and Salaries Policy is a vital instrument in ensuring the most effective deployment of the labour force as a whole; on the other, the relative short-term inflexibility of the educational system makes it vital to use to the greatest possible effect such skilled manpower in the wage-economy as will be available.

2 Manpower Needs 1971-80

2.1 A coherent manpower strategy for development in Malawi needs to be broadly based. "Traditional" approaches to manpower planning in Africa concentrate almost exclusively on the development bottlenecks caused by skilled manpower shortages in the modern (predominantly urban) sector. In contrast, the starting point for manpower planning in Malawi is recognition of the fact, explained fully in Chapters I and III, that the development of agriculture and the rural areas is the cornerstone of Malawi's development strategy. A comprehensive approach to manpower problems must also fully take into account the considerable structural problems, difficult to handle in most conventional approaches, that are in the main the legacy of an inherited education system inappropriate to current need.

2.2 This is not to say that manpower planning along "traditional" lines is completely valueless: on the contrary, quantification of future manpower demands in the modern sector is an invaluable aid in planning the size of important kinds of educational expansion. Besides a manpower survey currently being undertaken to provide general guidelines which will be useful in long-run educational planning, a Manpower Assessment and

Utilisation Project is being set up to establish more detailed short-run needs for trained manpower, particularly in the private sector, and to enable efficient matching of available trained manpower to employer needs. This, however, only constitutes one part of an assessment of Malawi's manpower needs. Consideration of Malawi's development policies and targets in the general economic sphere (Chapters I and III) enables a fairly clear picture of Malawi's manpower needs to emerge even without, as yet, the benefit of results from the manpower survey.

2.3 There are broadly three areas where manpower needs appear sufficiently crucial that, if they are not met, they will pose a serious, and possibly fatal, threat to the achievement of policies and targets outlined earlier in this *Statement*.

2.4 The first of these areas is, of course, agriculture. As is emphasised throughout this document, agriculture holds the key to Malawi's development prospects. Through the linkages on both the demand and supply sides, the achievement of development objectives in all other sectors of the economy depends entirely on the success of agricultural policy. Further, the interdependence of increases in basic food-crop production and in export cash crop production mean that it is on the development of the *whole* of the agricultural sector that development prospects depend. Achievement of projected output targets in agriculture will require substantial improvements in agricultural productivity, and a major component of this increased productivity must come from improvements in the utilisation and training of the whole of the rural labour force. Consequently, by far the most crucial of Malawi's manpower needs over the coming decade is this development of the capacities and improvement of the utilisation of workers in the rural areas, especially the key figure of the smallholder farmer. The ways in which manpower aspects of raising rural productivity are being tackled, under both supply and utilisation policies, are discussed later in this Chapter.

2.5 There are two other areas where manpower problems are potentially harmful to development prospects. The first is in the possible shortfall in the availability of technical skills in a wide range of fields, but most crucially at the middle (or sub-professional) levels. There are two main reasons why this level is of such importance. First, in the current structure of skills in Malawi, the middle level of technical skills is the one in shortest supply relative to demand. Secondly, the problems of augmenting supply are likely to be more acute at this level than at lower (artisan) levels, where a good deal of substitution of less skilled for more skilled labour is possible, or at higher (professional) levels, where expatriate recruitment is often possible to meet short-term crucial needs.

2.6 The final area where manpower problems may prove harmful to development is in what is sometimes called "executive capacity". This is the extent to which the administrative and managerial capacity of the economy (both inside and outside Government) can improve in step with the very rapid expansion in the level of development activity that is projected.

2.7 An outline has now been given of the areas of manpower development which are critical if Malawi is to achieve the rapid rate of agriculture-based development set out elsewhere in this *Statement*. The policies which are designed to ensure that such manpower problems do not provide obstacles to development can be divided broadly into two major groups: supply policies, which consist of ways in which education and training (in the broad sense) can be improved and made more relevant to manpower needs; and utilisation policies, which seek to ensure that the most productive use is made of all the resources of manpower that are available.

3 Manpower Supply—Education and Training Policy

3.1 Introduction

3.1.1 Manpower supply policies—those involving the processes of education and training—can be looked at in terms of two broad features, their external efficiency and their internal efficiency. External efficiency is, generally, the extent to which education and training policies are related to the demands made on them by the rest of the economy or

society. Internal efficiency is the extent to which resources committed to education are used in educationally and economically efficient ways and is concerned with such questions as costs per student place. From the immediate development point of view the external efficiency of the educational system is the most central of the two concepts, but it is also necessary to look at internal efficiency. This is for two reasons. First, it is important to use scarce resources efficiently in a sector as large as education; and secondly, there may sometimes be a close relation between external and internal efficiency, such that improvements in internal efficiency may permit the objectives of external efficiency to be more adequately fulfilled. Both kinds of efficiency are therefore essential in a development—promoting educational policy such as Malawi's.

3.1.2 The obvious question now arising is the extent to which the shape of Malawi's education and training policies *as a whole* can be understood in terms of simply promoting the external efficiency of the educational system (given that it is desired in all circumstances to maximise internal efficiency). The answer is that policies in this field are not constrained by external efficiency in the narrow sense of meeting development needs in the 1971-80 period, but that they are limited to meeting the claims of the economy in a broader and long-run sense. Improvements to primary education clearly yield their full benefits to economic development over a very long future period: but they are, equally clearly, essential to long-run development and cannot be ignored in a rational policy for the current decade. Malawi's education and training policy is therefore focussed on meeting the long-run needs of the economy. The current and prospective future resource position obviously precludes policies which promote education wholly as an end in itself—educationally, Malawi is unable to afford any "pure consumption".

3.1.3 The example of primary school improvement quoted in the previous paragraph serves to illustrate the general point that the development benefits of education and training policies are in most cases of a medium and long-term character: in the short-run the contribution of education and training to development is necessarily limited. The reasons for this relative inflexibility of the educational system in promoting short-term developments are associated with two important types of time-lag. The first kind of lag is the fact that it takes a considerable length of time to convert human "inputs" to formal education into educated and trained "outputs". Part of the educational planning function is to shorten this period wherever possible, but educational processes will always involve a considerable "gestation period" of this sort. The second kind of lag stems from the fact that formal education cannot, by its nature, be related very exactly to the nature of work required of skilled manpower, though clearly the matching process can be a lot closer in some kinds of vocational training than in academic education. While formal education provides a necessary minimum qualification for many types of work, a large part of the necessary learning process can only take place in an informal setting—on the job itself. The time needed for informal learning of this sort varies widely from one type of occupation to another, but for at least one of the economically critical types of manpower problem—that of executive capacity—it clearly runs into a considerable number of years.

3.1.4 These two types of time-lags are clearly not independent of each other: there is a trade-off between them such that in some circumstances a longer period of formal education may be substituted for a portion of the informal learning process, and vice versa. These time-lags, therefore, make the short run impact of much of formal education on economic development smaller than might be expected. It is nevertheless true, as is seen below, that certain kinds of organised semi-formal training (especially in the crucial agricultural sector) may be expected to have strong development impact over fairly short periods.

3.1.5 The corollary of the proposition that education can do relatively little in the early 1970's to solve the manpower constraint is that the major effects on the manpower supply position over the next four or five years are the results of decisions in education and training taken in the past. Indeed, the outputs from most kinds of educational institutions are fixed more or less rigidly for several years ahead. Table VI.1 shows anticipated outputs up to the time when, for each type of education or training, this fixity ceases to operate.

TABLE VL1: EDUCATIONAL OUTPUTS—FORMAL EDUCATION AND TRAINING

	1964	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
A. Non-Vocational Education											
1. Primary School leavers .	30,700	27,500	27,000	27,600	30,560	33,900	35,000	36,500	39,400	44,300	
2. Junior Certificate ⁽¹⁾ :											
Internal .	1,610	3,310	3,410	3,680	3,680	—	—	—	—	—	—
External .	—	4,000	4,500	5,000	—	—	—	—	—	—	—
3. School Certificate ⁽²⁾ :											
Internal .	630	1,820	1,860	2,520	2,520	2,580	2,580	—	—	—	—
External .	—	250	275	300	—	—	—	—	—	—	—
4. "A" level ⁽³⁾ .	60	30	30	30	30	—	—	—	—	—	—
5. Chancellor College degrees ⁽⁴⁾ .	—	56	62	68	73	78	83	—	—	—	—
6. Law degrees .	—	—	4	7	7	7	—	—	—	—	—
7. Overseas degrees .	*	20	20	—	—	—	—	—	—	—	—
B. Vocational and Technical Education											
1. Agriculture											
(a) Farmer Training .	2,652 ⁽⁵⁾	66,617	—	—	—	—	—	—	—	—	—
(b) Field level staff .	41	143	165	220	235	—	—	—	—	—	—
(c) Diploma in Agriculture ⁽⁶⁾ .	—	28	48	47	70	40	—	—	—	—	—
(d) Degree in Agriculture .	—	—	3	12	12	12	12	—	—	—	—
2. Teaching											
(a) Primary: T3 ⁽⁷⁾ .	15	219	580	580	580	—	—	—	—	—	—
(b) Primary: T2 ⁽⁷⁾ .	—	87	110	110	276	—	—	—	—	—	—
(c) Secondary: Diploma .	—	25	30	53	32	34	—	—	—	—	—
(d) Secondary: Graduate .	—	—	—	10	10	—	—	—	—	—	—
(e) Secondary technical: Diploma .	—	12	—	—	—	—	—	—	—	—	—
3. Technical											
(a) Artisans and Tradesmen ⁽⁸⁾											
building trades .	*	112	112	144	172	224	—	—	—	—	—
non-building trades .	*	45	45	45	80	105	—	—	—	—	—
(b) Other skills ⁽⁹⁾ .	—	75	75	90	100	—	—	—	—	—	—
(c) Technicians: diploma ⁽¹⁰⁾ .	—	65	80	85	70	75	—	—	—	—	—
4. Other											
(a) Public Administration diploma .	—	15	15	14	20	15	—	—	—	—	—
(b) Health ⁽¹¹⁾ .	—	70	70	70	—	—	—	—	—	—	—

NOTES:

—signifies none

* signifies impossible to estimate accurately.

In general, figures show the total numbers who will complete various formal courses of education in each year. They do not show the proportion of completing students who are expected to "pass" any relevant examinations: it is particularly important to bear this in mind when considering the large number of students externally sitting

the Junior Certificate examinations. Only a very low proportion of these external candidates may be expected to obtain a full Certificate. (This is equally true of external School Certificate candidates).

- (1) Junior Certificate is taken after two years' secondary education (or equivalent).
- (2) School Certificate is taken after four years' secondary education. It is the normal basic entry requirement to all forms of post-secondary education within Malawi.
- (3) Used only for pre-qualification of students for courses in other countries. Other channels, especially the University, are now—in contrast to 1964—also used for pre-qualification purposes.
- (4) Ordinary degrees, obtained after a four-year post-School Certificate course.
- (5) Refers to number of farmers undertaking courses—most of one day's duration, but some lasting a week or more—at rural training centres. This of course is only a small part of the total farmer training effort, which is mainly of an informal, extension type.
- (6) All Malawi diplomas involve a three-year post-School Certificate course.
- (7) T3 training lasts two years on a J.C. base: T2 training for two years on an S.C. base.
- (8) These figures refer only to the more formal courses available in Malawi for artisan-type training: they clearly understate the total number coming forward to the labour market in each year.
- (9) These are in laboratory techniques, secretarial and typing courses, and in telecommunications.
- (10) These are principally in engineering (mechanical, civil and electrical) and business studies, with some in public health inspection and laboratory techniques.
- (11) These are quasi-professional medical personnel, (registered nurses and medical assistants) excluding the large numbers of relatively low-level enrolled nurses and midwives who are produced largely through religious mission training schemes.

3.2 Policy Since Independence

3.2.1 Since Independence in 1964, the national priority accorded to education has been third, close behind the related development of agriculture and transport. The figures in Table VI.1, comparing 1964 outputs with those for 1970–71 onwards, give a fair indication of priorities within education over these years. On the side of formal education, first priority has been the rapid expansion and improvement of secondary education from its very small and narrowly academic base. The justification for this concentration has been the very obvious one that secondary education provides the essential base from which a wide range of manpower needs must be met; secondary development was a pre-requisite of winning genuine economic independence. Quantitatively, expansion has involved quadrupling School Certificate outputs between 1964 and 1972; qualitatively, the curriculum has been substantially diversified and now includes considerable emphasis on technical subjects and on agriculture. Accompanying the development of schools at the secondary level, the setting up of a Correspondence College (to cater mainly for secondary level education) has been of great importance, given that even after expansion of the schools, only 10 per cent of primary leavers can find secondary places.

3.2.2 The second major emphasis in the formal education field since Independence has been in the development of post-secondary education through the setting up of the University of Malawi, embracing all forms of post-secondary teaching in the country. This has inevitably been an expensive exercise, but Malawi has rightly refrained from introducing uneconomic courses to train limited numbers of specialist professionals: most of the technically oriented education provided by the University is at the vital middle levels, rather than at top professional levels.

3.2.3 The other major educational effort reflected in the figures of Table VI.1 has been in the field, broadly, of agricultural education, both of formal and informal types. At the formal level, agriculture has been introduced into the curriculum of both secondary and primary schools. Major expansion has taken place in vocational training in agriculture, with concentration at technician and field levels. The growth in the numbers of trained Government workers in agriculture made possible by this expansion of vocational training has meant there has been a great expansion in the amount of farmer training undertaken since Independence. This has been at the two levels of informal training through contact between farmers and extension workers, and semi-formal training by the same extension workers in the very large numbers of rural training centres that have sprung up so rapidly since 1964.

3.2.4 The results of post-Independence policy are, in the early '70s, beginning to bear fruit in terms of augmentation of manpower supply. The main features of that policy can

be summarised as: first, laying an essential base, in the development of secondary and post-secondary education, for the long-run development of the economy; and secondly, making a notably rapid start in overhauling and improving the vital area of agricultural education.

3.3 Policy for the 1970's

3.3.1 Against the background of the principles governing education and training policy, of the assessment of Malawi's manpower needs and of the historical position, clear priorities emerge for education and training policy in the 1970's.

3.3.2 The first priority inevitably goes to the development of all aspects of education for agricultural and rural development. As is repeatedly emphasised in this *Statement*, prospects for rapid economic development stand or fall by a sustained rise in agricultural production and productivity. In this agricultural improvement, expanded educational and training are an essential ingredient. A wide range of education and training policies is designed with the promotion of agricultural and rural development in view (as are the most important of manpower-utilisation policies, set out later in this Chapter). Rural training efforts fall into three major areas, distinguished not only by type but also broadly by the time-period over which they are expected to bring benefits to the economy. Starting with improvements designed to yield benefits over a long period and moving to those expected to play a vital role in development over the coming decade, the three areas of policy for agricultural development are primary education, vocational training and farmer training.

3.3.3 Improvement of primary education can only bring limited economic benefits in the seventies: it must be seen as a vital underpinning to long-run development. There are two strands here, closely related. The first is the re-orientation of the primary school curriculum, already well under way, through which primary education will cease to orient itself to the needs of the few who pass on to secondary education, but will instead become fundamentally a terminal stage designed to meet the needs of the vast majority of pupils who will make their livelihood in the rural areas. Consolidation of the teaching of agriculture in the primary curriculum, introduced first in 1970, will provide the major focus of this effort.

3.3.4 The second strand is the improvement and expansion of primary teacher training. In 1970, less than 20 per cent of all primary school teachers had reached J.C. standard (2 years' secondary) in their own education: some 80 per cent had experienced only primary education. All primary teachers now being trained have at least two years' secondary school and a large minority have four years' secondary school: all receive two years' training. To minimise costs per student place, three national teacher training colleges are being built with much higher enrolments than the existing institutions which are mostly run by religious missions. The improvement in the quality of primary education that this will gradually bring about will also make the re-orientation of the primary school curriculum easier to achieve. The enhanced quality and relevance of primary education will improve the internal efficiency of primary education by helping to reduce the very high current rates of wastage.

3.3.5 Malawi's approach to the primary school sector is, therefore, a vigorous effort simultaneously to improve the quality of primary education and to re-orient it towards the needs of the crucially important agricultural sector. It is frankly recognised that Malawi's resource position precludes rapid numerical expansion in the primary schools, though by the end of the decade it is planned that the present enrolment ratio of 33.5 per cent of school-age population will be raised to about 50 per cent.

3.3.6 The second and third aspects of the rural training effort—vocational training and farmer training—are closely linked. Vocational training is of two major types. The first is the Malawi Young Pioneer scheme. The training of Young Pioneers at a number of bases throughout the country is designed to provide a core of disciplined and hard-working farmers, trained in simple but productive agricultural techniques. After one year's

rigorous training, Pioneers either return to their home areas where they set themselves up as smallholder farmers and teach others the methods they have learned, or alternatively join one of the expanding number of agricultural settlement schemes (for details of which see Chapter III). Young Pioneer training is basically a long-term policy for raising agricultural productivity, but will also have important effects on agricultural production during the coming decade.

3.3.7 The second type of vocational training—which can be conveniently called staff training—is a process of agricultural training at three distinct levels, directed principally towards wage and salary employment in the Government or private sector. The top levels of this training, to degree and diploma standards, are undertaken at the University College at Bunda and have been built up only since Independence. 1971 is the first year in which graduates have been produced from Bunda and, with relatively small numbers involved, it is expected that most will enter Government employment. At the middle diploma level, there have been outputs since 1969 (with 1971 output numbering 45), and so far concentration has been on a general course of agricultural instruction. A demand is now emerging from both private and public sectors for more specialised skills and in the 1970s it is planned both to expand the scale of diploma level training and to provide increasingly for the emerging specialised demands. Expansion of both the degree and diploma levels of agricultural training are important for the long-run and, especially in the case of diploma level training, should make a substantial contribution to both estate and smallholder agricultural development over 1971–80.

3.3.8 Even more crucial to development prospects in this decade is staff training at the third level, that of field level workers. These are the people who make face-to-face contacts with the thousands of smallholder farmers and who are therefore chiefly responsible for the third major aspect of the rural training effort, farmer training. Field workers are trained within the Ministry of Agriculture and Natural Resources and outputs of agricultural, veterinary and fisheries field workers has risen from the level of 41 in 1964 to 143 in 1970. Unfortunately this expansion has necessarily led to considerable geographical fragmentation of training, and has necessitated the use of buildings designed originally for farmer training (for example, the Likuni Farm Institute). In order to expand this type of training, to release converted institutions for their original purposes and to gain the economic and educational benefits of concentrating all forms of natural resources training in one institution, a new Natural Resources Training College will be built in the early 1970s. This will be situated in the Lilongwe area and aims to produce 275 field level workers per annum from 1976 onwards. The cost of this College will almost certainly exceed K2½ million.

3.3.9 The success of the third major aspect of rural training for the 1970s, that of farmer training, is intimately tied up with the successful expansion of the numbers of field workers coming forward into employment. Of all the aspects of rural training, it is farmer training that forms the single most crucial need for the 1970s, if the increases in agricultural productivity forming the basis of Malawi's development are to be realised. The substance of farmer training takes two related forms. The first is the advice and instruction given by field workers to farmers in an informal setting in the villages. The second is the variety of semi-formal courses of instruction which take place at the agricultural training centres (62 in all) which cover the country. A majority of these courses, which are basically an intensification of informal extension work, are of one day's duration, but a large minority—at the 15 residential training centres—last a week or more. Agricultural field workers are organised for farmer training in a way that corresponds to overall agricultural policy. They form two groups, some working in concentrations in the major project areas and others working in the general extension service throughout the country. It is important to understand that it is on the performance of both these groups of field workers that achievement of agricultural targets depend. This is because the success of Malawi's agricultural policy depends on general improvements in the productivity of food-crop production (on a national scale) as well as on ambitious targets for exportable cash-crops.

3.3.10 A good deal of space has been taken up in describing the character and expected results of education and training for rural development. This is justified by the clear fact that in both the short-term and the long-term rural training is the most critical of all educational needs in promoting general economic development. Other aspects of education and training do however have considerable importance for development. In section 2, the likelihood of growing shortages in some technical skills was mentioned as a potential constraint on development. Clearly, education and training policies must play the major part, especially in the long-run, in solving shortage problems of this type.

3.3.11 In the 1964–1970 period, educational policy was mainly directed (apart from education and training for rural development) to the very necessary task of establishing a solid base of manpower educated to secondary and post-secondary levels. This has now been substantially achieved; attention will increasingly be paid in the 1970s to meeting the rapidly growing demand of the economy for a wide variety of technically skilled people at all levels.

3.3.12 Despite the post-Independence concentration on general secondary and post-secondary education, a good deal has already been achieved in the technical field, especially in the sense of laying foundations for future expansion. Twelve secondary schools (roughly a quarter of the national total) have now been equipped with technical wings so that in future a considerable proportion of secondary pupils will be able to acquire the kind of pre-vocational technical background that will greatly assist their further vocational training in technical fields. The Polytechnic, a constituent college of the University, now offers a range of diploma-level technical and vocational courses in such subjects as engineering (mechanical, civil and electrical), business studies and laboratory techniques. It also participates in the National Apprenticeship Scheme by offering training to apprentice printers, welders, fitters, electricians and motor vehicle mechanics, though for each trade the numbers involved at the moment are small. Besides the Polytechnic, five trade or technical schools—three Government and two mission—offer artisan level courses in the construction trades and, to a limited but growing extent, in motor vehicle mechanics. The Government operated technical training institutions participate in the levy-grant Apprenticeship Scheme, in which apprentices, after a first year of full-time college attendance, gain experience and on-the-job training with employers while returning to college for three months of each year. An interesting and potentially very important addition to this range of formal training facilities is the Rural Trade School at Salima, which from 1971 will offer courses relevant to rural craftsmen, including for example house construction techniques and bicycle and simple machinery repair. Other important sources of technically trained manpower are the training schools operated by the Ministry of Works and Supplies and by Malawi Railways; and there has also been a substantial growth in organised on-the-job training of artisans and others among the larger private firms.

3.3.13 It is impossible at the present to state with any degree of certainty what kind and what size of demands must be met by technical training in the future. What is certain is that there are very considerable current shortages in many types of occupations requiring technical skills and that these shortages have been becoming more and more acute since Independence with the rapid expansion of the economy. Continued agriculture-based expansion will throw up more and more demands for technical manpower at all levels.

3.3.14 At the top (professional/graduate) level, most of the manpower needed must continue, as in the past, to be trained abroad because of the prohibitive costs of domestic production. Policy will therefore be principally oriented towards equipping students with the most appropriate qualifications for relevant courses in other countries. At present the scale of this pre-qualification is clearly inadequate: nor are the numbers of students currently "in the pipeline" nearly sufficient to meet the current demand for professionals, let alone the greatly expanded demand which will exist by the later 'seventies and early 'eighties. Considerable expansion of pre-qualification for professional level training, mainly in the applied sciences, will therefore be necessary over the next few years. It is likely that a variety of means will be used to achieve this objective, involving to some extent

the traditional method of "A" level GCE qualifications through sixth form education. Increasingly, however, it is hoped to use the institutions of the University, particularly the Polytechnic to achieve suitable pre-qualification. Even with an immediate stepping-up in the rate of pre-qualification training, it is important to recognise that the effect on manpower supply will be very severely lagged. For example, those who enter preparatory courses on a School Certificate base in 1972 will not start to return to Malawi as professionals before 1977 and 1978. The effects of this prospect of continuing shortage of citizen manpower on development are likely to be limited so long as expatriate recruitment remains possible. (See Section 4.)

3.3.15 At the middle and lower levels of technical skill, which can be characterised as technician and artisan level respectively, Malawi aims to provide most of the necessary skills domestically. At the moment, serious shortages exist in a number of different areas, among which manpower with supervisory skills added to a technical background is one of the most important. Forecasts of future demand from the manpower survey will be required before anything more specific can be said about the nature of future needs in this field.

3.3.16 Some points, however, should be emphasised. In the first place, the rate of growth in demand for manpower at these technician and artisan levels will, overall, be very high if the economy expands at the rapid rate projected. This will imply for the 'seventies considerable expansion in technical training, though it should be remembered that a good deal of training (especially at lower levels) is best and most cheaply done in an informal, on-the-job context. In the second place, the consequences for development of prolonged and increasingly acute manpower shortage in these areas are very serious, especially so at the middle levels where expatriate recruitment is difficult and certain minimum levels of formal technical training are essential. Thirdly, although the time-lag associated with the formal educational process is shorter for technicians and artisans than for professionals, it is important to notice that, except through the limited possibility of using existing physical resources more intensively, increases in the supply of manpower at these levels are unlikely to be very large before the second half of the seventies. (See again under Section 4 below.) Finally, it is important to recognise that the need for expansion in technical training, added to other demands for secondary educated manpower (in such fields as teaching) may well imply a further expansion of the secondary school system beyond its currently planned stabilisation at an enrolment of 12,600 in 1973/74. However, given the current deployment of resources in secondary education, it is likely that modest secondary expansion could be undertaken without the commitment of many new resources of either a capital or recurrent type.

3.3.17 The main elements of education and training policy for the 1970s, some of them necessarily still in rather general form, have now been set out, together with their relationship to the manpower requirements of development. Education and training strategy will concentrate on two major areas of critical importance to economic development. The first and pre-eminent area is the general attack on all aspects of education for rural development, embracing primary education and vocational and farmer training. The second, also of great importance, is the expansion of training for technical work at all levels, carrying the possible implication (about which there is as yet no certainty) that the secondary school system will need to be expanded.

3.3.18 It will be noticed that it is not possible to prescribe direct educational and training policies for the third major area of manpower needs referred to earlier--the development of executive capacity. The reason for this is the fairly obvious one that expertise in management is acquired principally through on-the-job experience; only to a limited extent does it depend on formal educational background. As pointed out earlier, it may be possible to obtain certain types of manpower faster if they have a high degree of formal education than if they have little education: this is basically, however, a matter of manpower utilisation policy, rather than manpower supply policy. It is now appropriate to turn to an examination of Malawi's manpower utilisation policies.

4 Manpower Utilisation Policies

4.1 Introduction

4.1.1 A comprehensive manpower strategy for development involves far more than an attempt to match supplies of appropriately trained manpower to an assessment of national economic needs, although such attempts are clearly vital, especially in the long-run. It is also essential that manpower is employed in the most productive way possible—there must be effective manpower utilisation policies. In the context of Malawi's development over the coming decade, effective utilisation of manpower resources will involve pursuing the following major objectives.

4.1.2 The first priority in planning for efficient utilisation of manpower is the maintenance of a balance of labour supply between the rural and urban areas. This means creating incentives which will ensure that the rural labour force does not lose the greater part of its most energetic and enterprising members, but which will also minimise urban unemployment and increase employment opportunities as rapidly as possible. The most important instrument in achieving these policies is the National Wages and Salaries Policy.

4.1.3 The second major objective is to ensure that incentives exist for the best possible utilisation of scarce middle and high level skills of all kinds, especially agricultural and technical. This is lent particular urgency by the problems (stressed in the earlier sections of this Chapter) of effectively increasing the supply of such skills in the short-term. A third objective of utilisation policy is to proceed with localisation as rapidly as possible in order to help win full economic independence. This may at times involve conflict with (in particular) the second objective; Malawi's attempted resolution of this potential conflict is explained below.

4.2 Rural-Urban Balance

4.2.1 The cornerstone of Malawi's manpower utilisation policies, having its most important effects in the area of rural-urban balance, is the National Wages and Salaries Policy. Formulated in 1969, its basis is the principle that increases in earnings should be related to increases in productivity; it therefore proscribes general increases in the level of wage-earnings, both at minimum wage level and above. It is not, however, a completely rigid policy and, as is explained below, allows for selective increases where there is clear economic need. The major characteristic of the wages and salaries policy which is important for the subject of rural-urban balance is that it pegs the general level of pay, including minimum wage rates.

4.2.2 The effect of this policy is clearly the improvement of the economic position of the generally poor agricultural community relative to the much smaller and generally richer urban wage-earning community. There are two mechanisms which enable the wages and salaries policy to achieve this. The first and most direct is that as agricultural incomes rise over time through the development explained in Chapter III, wage restraint clearly narrows the gap between higher urban incomes and lower rural incomes. Secondly, and less directly, stabilised wage costs prevent the development of an inflationary wage-cost spiral in the non-agricultural sectors. Such a spiral would, by substantially raising the prices of manufactures, effectively depress real living standards of farmers, who have no defence against rising prices because of their dependence on world market prices—and the weather—for the level of their incomes.

4.2.3 For both direct and indirect reasons, therefore, the wages and salaries policy will help to narrow the rural-urban income gap. While greater equality of income distribution is an important objective in itself, its crucial significance for manpower utilisation policy is that it minimises the incentive for migration of labour from the rural to the urban areas in the (usually illusory) hope of finding more lucrative wage-jobs. The stabilisation of urban wage-levels and the prevention of too much unproductive rural-urban migration are essential for several aspects of policy.

4.2.4 Taking first the rural labour force, the provision of incentives for its enterprising members to stay in agriculture, rather than leave for the towns, will help to maintain some

stability in the rural labour force and, most important of all, to ensure that its composition includes a high proportion of the most potentially innovative members of the community. These two results—ensuring stability and innovativeness of the rural labour force—clearly form an extremely important demographic base for the building of the whole rural training effort (described earlier in this Chapter). In this way the National Wages and Salaries Policy is an important prop to the whole of the vitally necessary policy of education for rural development.

4.2.5 The wages and salaries policy will also have important effects on manpower utilisation in other sectors. By minimising the flow of migrants to the towns in search of jobs which are usually non-existent, Malawi will be able to avoid the chronic economic and social problems of a growing mass of urban unemployed. Such a group, besides being economically unproductive, would bring—as experience in other underdeveloped countries conclusively shows—dangerous and expensive problems of a medical, social and even political nature. But besides the negative though important effect of avoiding urban unemployment, wages and salaries policy also makes some contribution towards the important positive economic objective of accelerating the rate of growth of wage employment opportunities.

4.2.6 While Malawi is compelled, by its stage of development and resource endowments, to concentrate its development strategy on raising agricultural productivity, it is concerned simultaneously to expand the range of available wage employment opportunities, especially in view of the growing pressure of the agricultural population on good agricultural land. According to preliminary results from the Population Change Survey which is currently running, total population is now growing at around 2½ per cent per annum. If this rate continues throughout the decade, it means that in the 15–59 age-group the number of males alone will increase by more than 350,000 between 1971 and 1980. Wages and salaries policy will play a part, a small part but significant, in attempting to provide a high rate of growth of wage employment, both inside and outside agriculture, over this period. In the private sector, stabilised wage-costs, coupled with the rising costs of (imported) capital, will encourage substitution of unskilled labour for capital wherever this is technically feasible. In the Government sector, which operates from a budget limited by the availability of tax revenue, it is clearly much easier to expand employment of badly needed technical and other personnel with stability in salary scales than with constantly rising scales.

4.2.7 Even with considerable success in creating new employment opportunities, the smallness of the wage-economy means that only a small proportion of the addition to the labour force will be able to find wage-jobs over the 1971–80 period. Assuming—and this is broadly in line with past experience—that the number of new jobs rises at just over half the rate of growth in monetary output, total wage-employment will grow by about 120,000 over the decade from the current level of around 200,000 to 320,000. A maximum of only about one-third of net additions to the working-age male population will therefore be able to find wage jobs, even on the (unrealistic) assumption that none of the existing members of the labour force without wage-jobs take up any of the available new opportunities. It is clear that the majority of both existing members and new entrants to the labour force will have to make their livelihoods outside the wage-economy; and most of them will undoubtedly remain (or become) smallholder farmers.

4.3 Utilisation of Scarce Skills and Localisation

4.3.1 Traditional manpower planning, obsessed with scarce high-level skills, often ignores the equally vital—and often politically much more difficult—question of the utilisation of these skills. The basic principle here is that Malawi must as far as possible economise on the use of scarce resources and ensure that such manpower as is available is used in a way that maximises its contribution to development.

4.3.2 There are two important aspects to this policy of efficient skill utilisation. The first is to ensure that incentives exist to encourage acquisition of scarce skills and to ensure that those who possess them enter and remain in occupations to which those skills are

relevant. This may seem an unduly obvious objective to labour, but given the difficulties created by the inherited colonial structure of salaries and incentives, it is an issue which deserves close attention. The second aspect of policy derives from the fact that even if all skilled manpower is efficiently used in the sense described above, Malawi may still be faced in the coming decade with shortages in skills crucial to development. This necessitates a number of strategies designed to modify the ways in which skills are used, described in more detail below.

4.3.3 In a labour market functioning with reasonable smoothness (and without significant externalities), efficient utilisation would largely be obtained through market adjustments in salary rates: in those occupations for which demand exceeded supply, salary rates would rise and attract a larger flow of entrants. The Malawi labour market is however unable to respond in this flexible way. The major reason for this is that the market for skilled labour is dominated by the Government and quasi-Government sector (which has, for example, absorbed more than 80 per cent of the first two years' degree level output of the University). The actual structure of salaries in Government employment is still heavily influenced by the colonial period, when junior employees earned salaries appropriate to local economic conditions while administrators, drawn from abroad, were paid according to conditions in the quite different British labour market. The result—to take a striking example—is that while junior clerks enter Government earning roughly four times the level of national income per head, university degree-holders enter at a salary roughly thirty times the level of *per capita* income.

4.3.4 The unaided labour market is therefore unable to allocate manpower among alternative occupations to maximum effect. However, the structure of relative salaries—and movements in the structure—remain major determinants of occupational choice for individuals. Despite the imperfections in the labour market, it is still possible to use the labour market as a major instrument of utilisation policy, through deliberate alterations to the structure of salaries. This can be made particularly effective in the attempt to match skill acquisition and occupational choice to manpower demands. While a major principle of the National Wages and Salaries Policy is that no general increases in pay can be permitted, another important principle is that selective increases can be allowed where it is necessary to attract more entrants into areas of training and work where there is excess demand. In some areas the problem of creating appropriate incentives is less serious than in many other underdeveloped countries. To take one example, levels of starting pay for graduate secondary school teachers are identical to those for Government administrative officers.

4.3.5 Nevertheless, judicious alterations in the structure of relative salaries—especially in making middle and top level technical and agricultural jobs more attractive—will undoubtedly have to be practised a good deal more during the coming decade, if there are to be adequate incentives for individuals to train for and enter the fields in which the greatest demands will lie. In the private sector, these alterations will largely come about through market forces: but in the dominating Government sector, administrative action—based on realistic economic appraisal—will be necessary.

4.3.6 Even with appropriate salary incentives, serious problems of skill shortage relative to rapidly growing demands are likely to emerge over the decade. This of course is made all the more inevitable by the delays (discussed in Section 3 above) in producing new supplies of scarce skills. In order to ensure that these shortages do not hold back rapid development it will be necessary to implement a number of related policies.

4.3.7 In the first place, utilisation can be improved by changing the ratios in which personnel at different levels are employed. This means substituting lower level skills (in greater numbers) for higher level skills, wherever the lower level skills are in more plentiful supply. For instance, an organisation previously working with five technicians and twelve artisans may function just as efficiently in future with three technicians and 16 artisans. As a result, principally, of colonial policies, an observable degree of manpower "top-heaviness" exists in a number of organisations in Malawi and there are strong possibilities

of substitution of this sort to help alleviate shortages. Such substitution will undoubtedly prove a useful way of spreading skills as productively as possible, but it is likely to be most effective at the lower levels of the skill spectrum, where the process will involve substitution of more readily available semi-skilled workers for more formally trained artisans or technicians. The policy is likely to have less application in tackling higher level shortages: there is less point in trying to substitute technicians for professionals if supplies of manpower of both types are equally limited. Even here, however, such substitution may well be rational as a more long-term aim—technicians are very much cheaper to employ than professionals and the necessary training and experience period is often shorter.

4.3.8 In one extremely important area of manpower, top-level management and administration, there is another possibility for overcoming shortages. This is an attempt to substitute formal for informal qualifications. This is a possibility pointed out earlier in discussing how the "executive capacity" bottleneck could be relieved. While managerial jobs normally require considerable periods of on-the-job experience, extra years of formal education can act as a partial substitute for this informal learning process. This kind of substitution can of course only be carried out where there is a supply of manpower of high formal qualifications already in existence and it is the very lack of such supply in most fields that creates such severe problems. In this case, however, a supply of suitable non-specialised graduates does exist; and it is of particular importance—in the cause of winning full economic independence—to ensure that Malawi citizens occupy a high proportion of top administrative positions. This is an objective going beyond the purely economic and considerable progress has already been made. In the decade to come, this kind of substitution will continue to be important in the managerial and administrative field.

4.3.9 The utilisation policies already described can do a great deal to overcome the detrimental effects of the manpower shortages that will undoubtedly emerge more and more strongly as the economy develops over the decade. In the long-run, manpower supply policies—education and training—will fill the gaps, given appropriate incentives. Over the next ten years, however, considerable manpower shortages will inevitably still arise, especially at the middle and upper levels of technical and agricultural work. If these shortages are not to have serious retarding effects on the rate of overall development, it will be necessary to rely heavily throughout the decade on the last resort of utilisation policy—foreign recruitment.

4.3.10 Malawi's policy on localisation has always been a pragmatic one and has always attempted to ensure the maintenance of reasonable standards of efficiency before allowing localisation to proceed. In the very wide range of occupational fields, in the private as well as the public sector, substantial and often complete localisation will be achieved in the 1970s. In this process, particularly in the private sector, the Manpower Assessment and Utilisation Project will play an important part. Nevertheless, in technical and agricultural occupations at middle and upper levels—those levels generally requiring substantial formal training—there will inevitably be areas in which considerable foreign recruitment will continue to be essential, if there is to be no hindrance to the development of the economy as set out elsewhere in this *Statement*. Indeed, in some areas, while the rate of localisation may improve during the decade, there may need to be an increase in the absolute numbers of expatriates in employment. By the end of the 'seventies, while there will undoubtedly be considerable numbers of expatriates needed, the effect of supply policies will mean that the gaps they fill will be increasingly highly specialised and confined to relatively limited areas of high-level technical skills.

4.3.11 This raises the question of the feasibility of recruiting enough expatriates with the required skills. Indeed, some problems have already been experienced in a number of fields of expatriate recruitment. Given that the skills in short supply in Malawi may often be those which are also internationally scarcest, a great deal will depend on the flexibility—especially with regard to financial inducement—with which foreign recruitment is pursued.

Chapter VII

Health, Community Development and Housing

1 Health Policy

1.1 Introduction

The present low level of health in Malawi suggests the likelihood that any extra resources allocated to the field of health will yield a substantial rate of return in terms of net increases in output. Unfortunately, research on the relationship between the costs of health services and the benefits in higher production is beset by a number of problems and the extent of our knowledge of these relationships in Malawi is at present limited. Priorities for health development in the next decade rest heavily on hypotheses which are as yet not fully tested, though the grounds for believing in their validity are strong. The main hypothesis of this sort is that the economic rate of return to new resources in preventive health services is likely to be higher than to similar allocations to new curative services.

1.2 Problems of the Health Service in Malawi

1.2.1 Before enumerating those areas of health service development which are likely to contribute most strongly to the achievement of targets in other sectors in the next decade, it is necessary to look at the present condition of health services offered in Malawi. The provision of health services is divided between Government and religious missions, each of which makes available just over 3,000 beds. This yields a low rate of 1.3 hospital beds per 1,000 persons. In addition there is approximately one unit (dispensary or above) for every 20,000 persons. Both concentrate their resources extremely heavily on curative services, but while the Government provides services free of charge (although optional better grade facilities can be obtained at the larger centres on payment of fees), the missions generally levy some charge on patients.

1.2.2 Even though the level of health services per head of population at the time of Independence was low, competing demands for funds from the national budget have rendered health a sector in which it has proved extremely difficult to implement new and economically productive services over the past six years. Within the health sector itself, problems have been encountered in the recurrent budget and in the relationship between the recurrent and development budgets. In the recurrent budget the problem has been that rapidly increasing demands, together with increasing costs on the curative services, have necessitated sharp increases in annual recurrent expenditure, simply in order to maintain the curative services at their existing level per head of population; and this has been done with no significant increase in the number of units available. The result has been that existing units are now overcrowded and that existing staff are inadequate to deal effectively with the ever-increasing pressures imposed upon them.

1.2.3 These pressures have come from two main sources. The first source has been population growth (which has been around 2.5 per cent per year); and the second has been the broad effects of education, which mean that a higher proportion of the existing population now demand medical attention of a modern type each year. In consequence, the gross total of revenue account expenditure on health services has risen from K1.8 million to K3.2 million in 1970/71, an increase of about 76 per cent during the whole period—or roughly 10 per cent per annum. Only a tiny part of this increase in recurrent health expenditure can be attributed to the direct results of new capital expenditure. Expenditure on development account in the health sector over the same period (i.e. 1964 to 1970/71) has been almost negligible; only K1.06 million out of a total development

account expenditure of K85.61 million, or less than 1½ per cent. Moreover, a large proportion of this expenditure was used not for development in the sense of expanding the available health facilities, but simply for repair and replacement of existing institutions.

1.2.4 Shortage of revenue in the recurrent budget has in fact been a more limiting constraint on capital expenditure over the post-Independence period than the admittedly relatively low priority which has been assigned to health in the Development Estimates. The problem has been far less to find capital finance from foreign donors for well designed health projects than to find the extra recurrent finance to maintain such new projects, at a time when preservation of existing services and rising costs were causing heavy increases in the recurrent budget, which is third in size behind only the Ministries of Education and Works and Supplies. Donors have usually been unwilling to meet recurrent costs themselves, even for limited periods, even though in health much of the expenditure which recurs annually is nevertheless in an important sense developmental.

1.2.5 Despite the sharp increases in the recurrent budget in health, the per caput level of annual expenditure still stagnates around the 1969 figure of 65 tambala, a fact which clearly shows that the current level of health services is still very low. This situation strongly influences the order of health priorities (discussed below) established for the next decade.

1.3 Health Policy and Priorities

1.3.1 The investment component of resources allocated to health is basically very similar to the investment component of education. One very good example of the way in which new resources allocated to health can act as a productive investment occurs in major agricultural schemes (though this applies to a lesser extent to agriculture in general), where a certain level of health service improvement may be essential in order to realise the objectives and production targets of the project. There are in practice likely to be a considerable number of cases of this sort in Malawi, but even though health improvement is often productive and complementary to some other investment, it is difficult to quantify the benefits in terms of increased output. This problem of quantification does not, however, detract from the real economic value of certain kinds of health services improvement.

1.3.2 An economically rational health policy for Malawi should therefore follow two general principles. The first is that significant economic returns to health are very likely to occur in situations where there is no under-employment. In a predominantly agricultural economy such as Malawi, there must inevitably be considerable under-employment of unskilled labour in the rural areas. However, the provision of extra health services is likely to have a significant effect in increasing the productivity of this labour, and is to be economically justified in specific geographical areas such as the major agricultural projects, the development of which can be seen in one sense as the elimination of under-employment; and the urban areas, where there is a heavy concentration of scarce skilled manpower. It should be emphasised that the provision of extra health services that this principle implies is not necessarily a response to pressures from these areas for more health as consumption, but instead will be undertaken for its contribution to increasing output through the reduction of working days lost of scarce skilled manpower.

1.3.3 It must also be accepted that the provision of additional health facilities in the rural areas in general is likely to yield some economic benefits. Since some under-employment in these areas is in one respect due to poor health resulting from the prevalence of debilitating diseases, it follows that the extension of medical facilities will lead to an increase in the working capacity of the economically active population. Rural health education will also lead to longer life-expectancy and a reduction in mortality rates. Net output is therefore likely to increase both as a result of higher productivity per worker and an overall increase in numbers in the economically active age group.

1.3.4] The second principle is that where health development does take place (and where choice exists) the emphasis should shift gradually from curative to preventive services. On both empirical grounds and *a priori* reasoning, it is true that the economic returns to new investment in preventive health are in the long run likely to be much higher than investment in curative services. The Government is particularly anxious to develop full health units, which will emphasise preventive services such as ante-natal care, under-fives treatment and health education, in addition to normal curative services. The conviction that preventive yields better returns than curative services rests on the view that, for the same cost, the benefit in terms of working days gained is likely to be much higher in prevention than in cure.

1.3.5 With these principles in mind, priorities in health emerge clearly. The first priority is the replacement of existing antiquated District Hospitals and the provision of new additional hospitals in certain areas. In so far as the former is concerned, an immediate and pressing requirement is for the development of a new hospital at Lilongwe. Existing health facilities at Lilongwe are clearly inadequate for the expansion of population at the New Capital from a level of 40,000 in 1970 to an estimated 177,000 in 1980. The heavy concentration of scarce skilled manpower in Lilongwe therefore necessitates a new General Hospital (as well as some interim improvements to the old hospital) with both curative and preventive functions. The total capital cost of this development at Lilongwe is expected to be around K2.50 million. The very large and increasing level of recurrent resources needed to implement this first priority lends particular urgency to two points already made concerning health development. The first is that further health development needs to have some economic justification and the second is the very great need, given that much recurrent expenditure on health is itself of a developmental character, to persuade foreign donors to meet, at least for a temporary period, the recurrent costs of health improvements.

1.3.6 The second priority is the development into full health units, with strong preventive as well as curative functions, of existing dispensaries, which are at present almost exclusively curative. At the same time, any new units should be planned on this basis. The development of these units will take place along lines already established in the extremely successful Lower Shire Valley Pilot Project. Clearly, whether or not expenditure on health-centre development is going to act primarily as investment or consumption depends on the location and catchment areas of centres. In areas where scarce skills are concentrated, returns should be high through cutting down working days lost through the preventive function. With this in mind, the first units are to be developed in the districts of Blantyre, Zomba and Chiradzulu, where these net benefits are likely to be realised very strongly. In time, however, it is the policy of the Government to extend this development of health units to the whole Southern Region and eventually to the whole country.

1.3.7 In this connection, three points should be noticed. First, given priorities within health, it is clear that the development of health centres outside concentrations of scarce skills is unlikely to take place for three to four years. Secondly, and most important, is the fact that of any form of development in the health sector this seems to be the most efficient, on both medical and economic grounds. Finally, it is clear that as the problem of under-employment is in time overcome in larger and larger areas of the country, so the health units will start to produce the highest net economic returns available to health services in those areas. In other words, the process of development will turn these consumption services increasingly into investment services. The cost of this health centre development over the decade is likely to amount to K600,000.

1.3.8 The next priority must be the development of expanded health facilities in the areas of major agricultural projects. As explained earlier, unskilled under-employment means there is no significant economic rate of return to general expansion for rural health services, desirable though such expansion is as consumption. But in major project areas, improvements to agricultural practices—taking place as they will in the absence of significant mechanisation—will reduce under-employment and lead to a substantial

increase in the physical work-load of project participants. Because of the widespread incidence of debilitating diseases in the rural areas, it is most unlikely that project output targets can be fully met without bolstering health facilities available in project areas (especially the preventive health component). This case is even stronger in projects which involve substantial irrigation, because the greater diffusion of water helps to increase the incidence of diseases like bilharzia and malaria. It is therefore Government's policy to provide either improved or new health units in all areas of major projects; with particular emphasis, in order to meet project targets, on health education and preventive health in general. If over the decade we assume the equivalent of ten major projects, then the total capital cost of providing such services will be around K4 million; and there will inevitably be substantial increases in recurrent expenditure.

1.3.9 Parallel with this programme and an integral part of all measures aimed at achieving objectives for the next decade is the establishment of expanded training facilities for the key cadres of medical assistant and clinical officer, who will be required in increasing numbers in the future. At present, the numbers of medical assistants trained annually barely keeps up with replacement needs; and yet the maintenance of existing levels of services, because of population growth, will require a continued expansion in this cadre. There is an additional urgent need for refresher courses for medical assistants already in service, many of whom have served for many years without any up-dating of their knowledge. There is also a need for providing new training for clinical officers. This is a relatively new cadre, members of which will receive three years' post School Certificate training. Being more highly qualified than almost all medical assistants, they will be able to run the new preventive-oriented health units which the Government intends to introduce where possible. A new training school at Lilongwe, to be built in conjunction with the new General Hospital, is therefore planned, and is expected to become operative in 1974. The capital cost of this development is expected to be around K300,000.

1.4. National Priority in Health Development

1.4.1 It is essential to give a ranking of priorities within the health sector over the next decade, but this, as in other sectors, raises the issue of the overall priority to be accorded to the development of health relative to other sectors of the economy. In a social service sector like health, the question raises itself in the form of how much of proposed health development forms an essential complementary investment to resources allocated in the directly productive sectors. Or, in other words, how much of the health programme is necessary to realise policies and targets in income-producing sectors (and without which the achievement of such targets would be threatened). Within the limitations of our present knowledge, the answer is implicit in what has already been said. It is that the priorities above: the maintenance of existing services and replacement of antiquated district hospitals, particularly the one at Lilongwe; the development of existing and additional units into full preventive-oriented health units; the expansion of health facilities in areas of agricultural projects; and the provision of additional training facilities, are all crucial to the achievement of development objectives over the next decade. Their implementation, particularly the preventive health component, necessarily requires close co-ordination with community development work.

2 Community Development

2.1 Introduction

2.1. With a non-urban population accounting for over 90 per cent of the total population in Malawi, one essential aspect of the development programme for all sectors of the economy is to ensure that the benefits accruing from every development effort are not confined to the urban enclaves alone, but are spread to a large section of the rural population. In Malawi, like every developing country, it is true that the early phases of development necessarily involve adapting social institutions and some aspects of traditional ways of life to change. Receptivity of the rural population to such changes determines the success or failure of this transitional phase. It is at this important stage that the Department of Community Development makes its contribution.

2.1.2 The major objective of the Government in the field of community development is to create a greater awareness, an increasing interest and an active participation in Malawi's overall development programme on the part of the rural community. In this connection, particular emphasis is given to the Government's preventive health programme, to promoting Government policies and to utilising the local authority structure in the field of education. At the same time, every assistance is given towards ensuring the success of the Government's development programme in the fields of agriculture and transportation. In line with this major objective, the Department operates at the village level, for the personal involvement of every villager in efforts to improve his own way of life and standards of living; thus enabling him/her to acquire the maximum social and economic benefits arising out of the Government's development programme.

2.2 Policy

2.2.1 Arising from the need to work towards realising this prime objective, specific aspects of policy for the Department of Community Development emerge. The first is to educate the local people in measures relating to village health, water supplies, sanitation and other preventive health measures; in matters affecting maternal and child health; in regard to food and nutrition (through the Department's Home Economics programme); in the setting up of communal village facilities; in the improvement of village layouts, in the construction of better houses, and clothing both for children and adults.

2.2.2 The second aspect is to inform people in the rural areas of development planned for those particular areas and to seek their participation in such development projects. To carry out this task, co-operation is sought, particularly at the field level, with extension staff of all Ministries—especially those responsible for agriculture and the social services—so as to ensure the active involvement of the rural community in the development policies of those Ministries. In this connection, the work carried out by the Malawi Young Pioneers in agricultural settlement schemes is regarded as complementary to the whole extension effort.

2.2.3 The third aspect is to encourage active community development among people in their own villages. To this end, the Department trains local leaders who assist the people in setting up Village Development Committees to identify their own needs; and Action Groups to implement local communal projects through self-help. A further dimension of this activity is the adult literacy programme which is aimed, among other factors, at helping people to free themselves from traditional restraints hindering enterprise and innovation and to foster a sense of responsibility for their own welfare.

2.2.4 The fourth aspect is departmental staff training; and, in particular, training the cadre of community development assistants. These people are instrumental in executing the Department's plans of action because they man the rural centres and therefore have direct day-to-day contact with the rural community. The Department also conducts special courses for political leaders, traditional leaders, District councillors and extension staff of various Ministries.

2.3 Priorities

2.3.1 Of necessity, the training programme must receive a fairly high priority, as must the home economics programme which is directed at the smallest unit in the social structure, the family unit. Likewise, since the basic objective of community development is to sponsor self-help by the people themselves, the effective implementation of genuinely useful and worthwhile projects must be given high priority. All self-help effort must be geared closely to the national development programme. In its efforts, the Department of Community Development can only strive to achieve the maximum results with a very limited budget. In view of financial and other limitations, the scope for activity in the field of adult literacy is necessarily somewhat restricted and has a somewhat lower priority than the other activities of the Department.

3 Housing Policy

3.1 Housing construction is conventionally regarded as investment, but from a development point of view it has more of the characteristics of a consumption good than an investment good: other things being equal, the development of housing would therefore be allowed to reflect evolving consumer preferences and the Government would need no specific housing policy. However, the nature of the housing market in Malawi is such that investment in the construction of new houses must generally involve Governmental sponsorship and finance, and hence competition for scarce capital resources with other more obviously productive public investments. On the other hand, housing conditions can in practice have important effects on economic and social development—particularly through the possibility of health risks—and the Government will therefore, over the decade, commit resources selectively to the housing sector.

3.2 In the rural areas, where well over 90 per cent of Malawi's population live, existing social institutions and resources—labour and raw materials—are in general adequate to ensure a reasonable standard of housing. It is in the urban areas that the major housing problems lie; Government consequently will concentrate its attention on housing in the towns. Urban housing problems derive from several sources.

3.3 In the first place, while population is growing nationally at about 2½ per cent per annum, urban population is rising much faster. When the higher rate of urban natural increase is added to the effects of migration to the towns from the rural areas, it seems probable that the urban population is growing at around 8 per cent or more. In the past this growth has been centred very heavily on Blantyre/Limbe—by far the largest urban concentration in the country—but will in future be mainly shared between Blantyre/Limbe and the New Capital at Lilongwe. Over the coming decade an urban growth rate of around 8 per cent is expected to continue: the total urban population will probably increase from its 1970 size of 275,000* to about 600,000* by 1980. With five persons per household, the increase in the number of dwelling units needed over the decade will be roughly 65,000, or about 6,000 a year.

3.4 Secondly, while it is true that the rapid rate of urban growth will reflect—as it has in the past—fast growing employment opportunities (see Chapter VI), the wage-structure in Malawi is such that most of the people who add year by year to the urban population earn too little to afford housing of permanent materials. This has led to a situation, in the last two or three years, where “squatting” development poses a considerable health and social hazard.

3.5 Thirdly, the private house-building industry generally finds relatively limited production of small permanent housing to be unprofitable. The provision of permanent housing for those who are in a position to pay economic levels of rent is therefore undertaken by the Malawi Housing Corporation, which is the executing agency of Government's policy in housing. The MHC is required to be financially self-sustaining, but can only finance from its own resources a very small proportion of its investment programme. Despite the reluctance of the private sector to involve itself in construction of housing for general rental or sale, a substantial contribution to the urban housing stock has been made by a number of large private firms who have built residential estates for their employees.

3.6 Fourthly, there are severe limitations on the supply of financial resources for the housing sector. Private domestic savings can only supply a very limited amount of investible resources in a country at Malawi's stage of development and there is also considerable reluctance among major foreign donors to finance housing development.

* These figures include a small number of people in rather small settlements (down to 1,000 or less) which only partially merit the description “urban”.

3.7 These three characteristics of urban housing problems—rapid population growth, squatter development and the lack of private sector interest in general housing development—lead to the following characteristics of housing policy over the coming decade.

3.7.1 Most important of all from the development point of view is the further development of the "site and service" scheme for those town-dwellers—the great majority—who cannot afford housing of permanent materials. A site and service scheme has been in existence in Blantyre/Limbe for some years and has already provided some 4,750 individual plots. Basic amenities such as roads, water and pit latrines are provided, and tenants are left to build their own houses. Demand for new plots is currently greatly outrunning supply and a substantial expansion of the scheme—in Lilongwe as well as in Blantyre—is being undertaken. The importance of this extension to site and service, which has proved extremely successful so far, is that it is the only feasible and inexpensive (relative to permanent construction) way of defeating the problem of the growing and unplanned squatter areas, which pose a serious health hazard (besides fostering a good deal of socially undesirable behaviour). Further site and service development therefore constitutes the most important objective of housing policy during the coming decade.

3.7.2 The second aspect of housing policy involves further investment in small to medium-sized permanent houses through the MHC. Demand for this type of housing, while arising from a minority of the urban population, is certain to rise rapidly through the decade as a consequence of general economic development rapidly expanding the demand for manpower at middle levels of the skill spectrum (see Chapter VI). For the last three years, MHC has been building housing of this type at the rate of about 300 units a year through a Consortium loan: this rate of construction will be stepped up to around 400 a year as a result of the recent completion of negotiations for a second Consortium loan.

3.7.3 The third aspect of housing policy involves a determined effort to increase the sources of finance—savings—for housing development. Further external finance will be sought, despite the reluctance among major donors to commit funds to housing projects. This reluctance makes it all the more important to concentrate on increasing internal sources of housing finance. An important contribution will be made by the Government which (while paying full economic rental to the MHC for houses occupied by Government employees) currently subsidises the housing costs of civil servants. The policy is ultimately to eliminate this subsidy. Removal of rent subsidy will provide an important incentive to the extension of home ownership, which will remain a major objective in attempting to raise more internal finance for housing.

3.8 Government's responsibility for providing housing is thus largely confined to the main urban centres of Blantyre and Lilongwe, apart from the obvious need to provide accommodation for civil servants required to live in specific outlying places. In the absence of significant private sector investment, it will be necessary to continue to make funds available for housing from the public sector, in order to avoid the creation of unhealthy and insanitary conditions in urban areas, which could retard the general pace of economic development.

Chapter VIII

Public Finance

1 Introduction

1.1 In Malawi, as in many other countries at a similar level of development, the public sector plays a leading role in the economy and thus in its development. In addition to Central and Local Government, and such institutions as the University, the public sector consists of the Agricultural Development and Marketing Corporation, Air Malawi, the Blantyre Water Board, the Capital City Development Corporation, the Electricity Supply Commission of Malawi, the Kasungu Flue-Cured Tobacco Authority, the Malawi Book Service, the Malawi Broadcasting Corporation, the Malawi Development Corporation, the Malawi Housing Corporation, the Malawi Railways Group (including the Lake Service and Road Motor Service), the Reserve Bank of Malawi and the Smallholder Tea Authority. Together this sector covers and has interests in most key aspects of the economy, in some cases in partnership with private enterprise.

1.2 In considering the overall public sector capital programme, investment by all these enterprises must of course be included. On recurrent account, however, the enterprises of a commercial nature are self-financing.

1.3 This chapter considers the financial requirements for investment in the public sector, where the necessary resources are expected to come from and the consequences of the borrowing programme in terms of servicing costs. Finally the impact of this investment programme and of development generally on the government's recurrent budget is explored in outline.

1.4 The Malawi Government operates two budgets, the Development and Revenue Accounts. The former covers all investment expenditure, including some recurrent expenditure of a developmental nature, while the latter covers the recurrent expenditure and all debt servicing. Thus the administrative division between the two budgets corresponds very roughly to the National Accounts distinction between investment and consumption. The government's financial year runs from April to March.

2 Public investment

2.1 The Public Sector Investment Programme

2.1.1 The objectives described in the sectoral chapters and quantified in terms of National Income projections in Chapter IX of this *Statement* will require a level of public sector investment of some K370-380 million over the decade if they are to be achieved.

2.1.2 The lion's share, some K110 million, of this investment, will have to be spent in the transport sector with more than half of this, K60 million, being spent on roads.

2.1.3 The next largest share of investment, some K70 million, will be in agriculture, which is the sector of highest priority. Moreover, as has already been noted in Chapter IV, most of the investment in transport infrastructure is directly related to agricultural development.

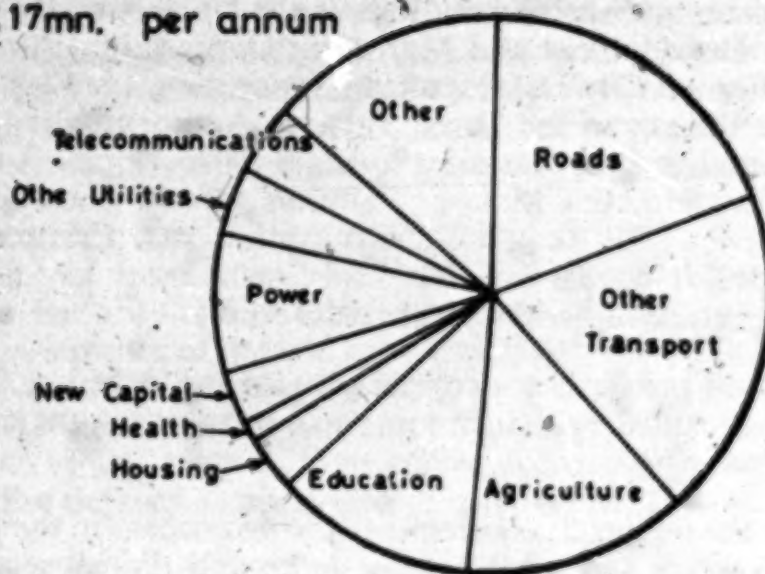
2.1.4 Though the main requirement in the social services sector is and will continue to be, for recurrent expenditure, there will need to be expenditure of some K55 million on fixed assets over the decade. Education will need some K20 million, which will include the costs of establishing facilities of a permanent nature for part of the University in Zomba, in the

Graph VII 1. Public Investment

1964 - 1970

K 119 mn.

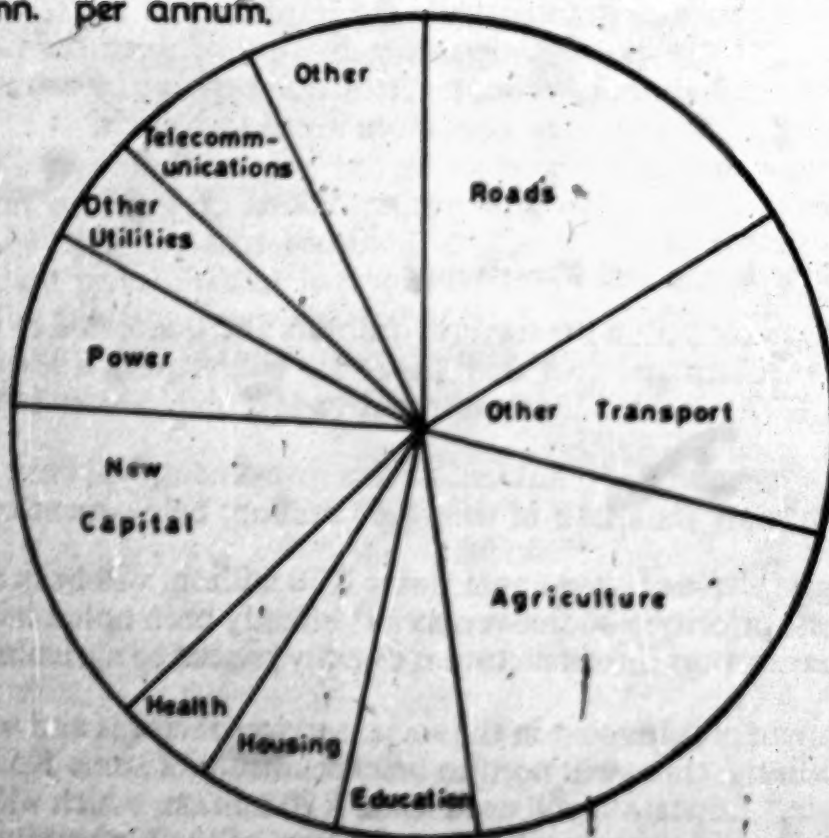
Average K17mn. per annum



1971-1980

K 374 mn.

Average K37.4mn. per annum.



wake of the Government's move to Lilongwe. K15 million required for health will include a new hospital in Lilongwe. K20 million required for housing includes investment by the Malawi Housing Corporation, but excludes housing financed within projects and by the Capital City Development Corporation.

2.1.5 The Capital City Development Corporation aims to spend at the rate of K5 million per annum throughout the decade. Most Government departments will have moved to Lilongwe by 1976 and the end of the decade should see the New Capital fully established on a path of self-sustaining development.

2.1.6 Utilities (power, water and sewage) will require some K40 million in investment, two thirds of which will be for power. This excludes provision of power for the Vipya scheme and for Mulanje bauxite, discussed more fully in previous chapters. Any project for the production of aluminium or alumina will require such large amounts of electricity, compared with present demand, that provision for supplying this power would have to be an integral part of the project package.

2.1.7 Apart from an allocation of K20 million for telecommunications, the residual will consist mainly of public sector participation in the commercial and industrial sector through the medium of the Malawi Development Corporation.

2.1.8 These figures are summarised in Table VIII.1 below:—

TABLE VIII.1: PUBLIC SECTOR INVESTMENT 1971-1980

	<i>K million</i>
Transport	110
of which Roads	60
Agriculture	72
Social Services	55
of which Education	20
Housing*	20
Health	15
New Capital	50
Utilities	42
of which Power	28
Telecommunications	20
Other	25
TOTAL	374

*Excluding project and C.C.D.C. financed housing.

2.1.9 It must be emphasised that these figures are not targets but merely indicators of the order of magnitude of public sector investment during the decade, based on current policies and objectives. The detailed planning of public sector investment will continue to be done on the basis of the present system of a three-year rolling programme, the first year of which is approved by Parliament in the annual Development Estimates. The figures given above constitute the longer term outline into which the successive shorter-term programmes will fit. This longer term view will make the logic of the three-year programme more apparent. The latter, in isolation, tends to show distortions in the short-run, due to random factors such as the availability of aid for a particular project. The broad ten-year picture is naturally far less precise and more subject to adjustment than the

short-term detailed programme, not only because it is looking further ahead but because it must be based on current expectations. For example, as has already been mentioned in earlier chapters, the successful launching of an aluminium industry in Malawi would bring about major changes in outlook for the whole economy.

2.2 Resources

2.2.1 In the previous section an estimate is given of the order of magnitude of investment required in the various sectors to achieve present production and development objectives. The supply side must now be examined in detail.

2.2.2 Of the total investment of K370-380 million it is expected that some K150 million will be undertaken by the public enterprises. Of this total, only a third will be financed directly by the public enterprises themselves, some K40 million out of their own resources (i.e. savings) and some K10 million by direct external borrowing.

2.2.3 Two thirds of the public enterprises' investment will be financed from external borrowings by the Government, on-lent to the enterprises concerned. Except for on-lending to the C.C.D.C., which will account for half of the K100 million, any concessionary terms which the Government obtains from external donors will not normally be passed on to the borrowing enterprise. Such on-lendings are normally made on the same terms as the Government's borrowing on the domestic market, and these terms are such as to ensure that the enterprise is required to earn a full commercial return on any investment. This practice, of course, also has a favourable impact on government finances.

2.2.4 The rest of the public sector investment will be undertaken directly by the central government, with perhaps a certain amount carried out through Local Authorities, as, for example, investment in the Blantyre sewage scheme.

2.2.5 The Government will therefore have to find some K225 million to cover its own direct investment plus K100 million for on-lending to the public enterprises. To this would have to be added a further K40 million of recurrent expenditure (in the National Accounts definition) to reach a total resource requirement of K365 million on Development account over the decade.

2.2.6 Although it is the intention of the Malawi Government to bring into the Revenue Account all appropriate recurrent expenditure, it is recognised that certain day-to-day expenditures—particularly in integrated agricultural projects—are of a developmental nature and may appropriately be treated as investment and be financed from loan funds. At the present time this type of day-to-day expenditure in the Development Account is running at a level of some K4½ million per year, and the figure of K40 million for the decade allows for steady progress in transferring some of this expenditure to Revenue Account.

2.2.7 To finance this requirement of K365 million there are four main sources: external borrowing, external grants, local borrowing, and transfers from Revenue Account.

2.2.8 Grants are expected to provide only a small contribution of some K10 million over the decade, but the absence of the need for servicing makes them a particularly useful source of funds. The Christian Churches in Malawi, supported financially from abroad, are playing an increasingly important role in the provision of this type of finance. They are also particularly helpful in financing smaller projects, which are often unattractive to the major donors for reasons of size and geographical scatter.

2.2.9 The amount of local borrowing which the government can undertake is strictly limited by the need to maintain stability of the reserves and of internal prices. Due to the open nature of Malawi's banking system and a very low credit multiplier, expansion of credit to the private sector is automatically restrained by considerations of commercial prudence. The Government, on the other hand, is not subject to such considerations, and if there were excessive expansion of Government borrowing this would be directly reflected in a fall in the reserves and in some degree of internally generated inflation.

2.2.10 Thus the need to restrain local borrowing to a level consistent with reserve and price stability is one of the Malawi Government's most crucial policies. The maintenance of adequate reserves is vital to Malawi for three reasons. It is essential in an agriculturally orientated economy to be able to meet year to year fluctuations in export proceeds due to vagaries of both the weather and international commodity markets. The reserves also provide the backing for Malawi's currency. Even more important, they maintain Malawi's credit-worthiness abroad. This latter objective is crucial if the external borrowing programme outlined below is to be successful. The importance of price stability is discussed more fully in Chapter IX.

2.2.11 It is difficult to determine with any precision the level of actual savings in the economy on which the level of permissible Government borrowing depends. In the past, small savings with the Post Office Savings Bank, the New Building Society and the commercial banks have grown very rapidly, some one-and-a-half-times the rate of growth of monetary GDP. Over the decade under review, monetary GDP is expected to grow at some 10 per cent per annum. As is shown in Chapter IX it is expected that National Savings will increase very rapidly over the decade, at an average rate of 15 per cent per annum. In view of these very rapid rates of growth of savings, it seems reasonable to project Government local borrowing as increasing at the rate of some 12 per cent per annum on the present base of K5 million per annum, which seems at the moment to be fully consistent with stability in the reserves. Over the decade this would yield some K90 million and, as is shown in the Savings/Investment balance in Chapter IX, this level of borrowing appears consistent with Malawi's reserve objective.

2.2.12 This leaves some K265 million to be met by external borrowing and transfers from Revenue Account. A level of external borrowing of K250 million over the decade was thought feasible by a World Bank mission to Malawi in 1969 so this figure does not appear unrealistic, especially since the average annual rate is no higher than in recent years. These figures are summarised in Table VIII.2 below:—

**TABLE VIII.2. MALAWI GOVERNMENT DEVELOPMENT ACCOUNT
1971-1980 (SUMMATED)**

<i>Resources</i>		<i>Uses</i>		<i>K million</i>
External Borrowing	} 265	Recurrent Expenditure	.	40
Transfers from Revenue Account		Direct Investment	.	225
Local Borrowing .		Lending to Public Enterprises .	.	100
External Grants .	10			
	365			365

2.3 Servicing

2.3.1 The servicing requirements on current debt can be projected forward over the next half-century with fair confidence, though there are problems with loans not fully disbursed, changes in exchange rates and sinking funds. The amount of servicing on new borrowing is of course critically dependent on the terms Malawi will be able to obtain from lenders.

2.3.2 As will be shown below, Malawi cannot afford to borrow on hard terms. Apart from grants, the softest terms available to Malawi at present are those available from the Canadian Government (interest free for 50 years, 10 years grace) the British and Danish Governments (interest free for 25 years, 5 years grace) and the I.D.A. ($\frac{1}{2}$ per cent service charge for fifty years, 10 years grace). In order to calculate the servicing requirements on new borrowing over the decade, it has been assumed that it will be possible to borrow

over half the required resources on the softest terms presently available and the rest on increasingly harder terms, with 10 per cent on full commercial terms. Direct borrowing by public enterprises will be on commercial terms.

2.3.3 On these assumptions the total servicing on public external debt will be some K11½ million in 1975 and K20 million in 1980 compared with K5.8 million in 1970. As a percentage of exports of domestic goods and services, total servicing will show a rising trend, from 11.8 per cent in 1970, to 13.7 per cent in 1975, peaking at 15.9 per cent in 1978 and easing to 14.6 per cent in 1980.

2.3.4 Of this total servicing, that paid directly by the public enterprises will rise from K1½ million in 1970 to K2 million in 1975 and K2½ million in 1980.

2.3.5 Amortisation payments are the most rapidly growing element of total servicing, rising from K2.9 million in 1970 to K6 million in 1975 and K13 million in 1980, while interest charges increase from K2.9 million in 1970 to K5½ million in 1975 and K7 million in 1980.

2.3.6 Adding servicing on local borrowing and subtracting receipts from public enterprises of servicing of on-lent funds, the net budgetary requirements on Revenue Account will increase from K5.2 million in 1971/72 to K9 million in 1975/76 and K20 million in 1980/81.

3 Public Consumption

3.1 Recurrent Expenditure

3.1.1 The lack of funds for financing recurrent expenditure has been and will continue to be one of the major constraints on Malawi's development. This situation has been aggravated in recent years by the strenuous efforts undertaken by the Government to eliminate the recurrent budget deficit, at present met by a grant-in-aid from the United Kingdom. Great progress has been made and the deficit has been reduced from K11.9 million in 1965 to K3.6 million in the 1971/72 Budget. It is planned to eliminate budgetary aid entirely by 31 March, 1973.

3.1.2 This rapid progress has been achieved both by a very severe restraint on expenditure and by a substantial increase in tax effort. Tax revenue as a proportion of GNP rose from 6.7 per cent of total GNP (12.7 per cent of monetary GNP) in 1965 to 10.7 per cent of total GNP (17.2 per cent of monetary GNP) in 1970/71. Since it is neither practicable nor desirable to maintain such a rate of increase in the proportion of GNP taken in taxation, even after the budgetary deficit has been eliminated there will still be severe limits on the rate of expansion of recurrent expenditure which Malawi can afford.

3.1.3 With this need for severe restraint, the Government has developed a system of review of recurrent expenditure involving a three-year rolling programme. Each year this is reviewed and extended by the Cabinet, the first year of the programme forming the basis for the detailed Revenue Account budget proposals. As shown above the Development budget is derived in a similar way.

3.1.4 The Government operates an Appropriation-in-Aid-of-Expenditure system, whereby fees and other revenue directly connected with the provision of services are netted off against the cost of providing those services. The targets laid down by the rolling programme are in terms of net expenditure; Ministries are therefore automatically brought to examine very carefully the revenue-earning capacity of the various services they provide. However, this kind of revenue is not expected to make more than a relatively minor contribution to financing necessary government expenditure.

3.1.5 Three categories of recurrent expenditure need to be distinguished. First, there is the administrative overhead expenditure involved in carrying out the development programme. While some of this is included in projects and, as part of the capital cost, is loan financed, any continuing expenditure of this nature after completion of the project

must be borne by the recurrent budget. Secondly, there is recurrent expenditure complementary to the capital expenditure in the development budget which must be met if production targets are to be achieved. Examples of this kind of expenditure are agricultural extension services or repair and maintenance of assets. Initially, much of this expenditure is included in projects, but when the investment phase is over these continuing costs must inevitably fall on the recurrent budget. Finally, there is expenditure on other services which do not produce direct financial returns, such as the social services and law and order. However, the distinction between the last two categories is not always clear—thus, for example, the absence of adequate educational and health services or law and order can have a catastrophic effect on production levels in an economy. It is obviously not possible nor useful to give detailed targets for recurrent expenditure so far ahead, but it is possible to make some comments about the overall level of expenditure which Malawi will probably be able to afford by 1980/81.

3.1.6 The fastest rising element in current expenditure—the servicing of public debt—can be forecast with a fair element of reliability. As is shown above, net servicing will be running at some K9 million in 1975/76, rising to K20 million by 1980/81. This implies an average rate of growth of 16 per cent per annum over the decade in expenditure under this head, which emphasises yet again the absolute necessity for Malawi to obtain external finance on the softest terms possible. As for other recurrent expenditure, projected at a rate of increase of 9 per cent per annum (slightly faster than the growth in GDP), it would increase from K35 million in 1971/72 to K51 million in 1975/76 and to some K82 million in 1980/81, while total expenditure would increase 2½ times over the decade from K40 million to K102 million (K60 million in 1975/76). This is the level of expenditure consistent with revenue expectations and it is expected that it will be possible to make some allocations to the Development Fund out of this expenditure, at least towards the end of the decade.

3.1.7 Expenditure on economic services, in particular agriculture and public works, will continue to receive the highest priority. Some additional expenditure on administrative services to provide the necessary administrative support for the increasing level of development activities will be required, but this category of expenditure will be restrained as far as possible to allow for further expansion in the social services, mainly education and health. Thus expenditure on economic services is expected to rise more than threefold over the decade, that on social services may rise about two and a half times while that on administrative services may double. The relative rates of growth projected for these broad categories of recurrent expenditure recognise that, although expenditure on social services does not have a direct effect on the immediate level of production, indirectly it is of crucial importance in raising future levels of national income, as has been clearly shown in Chapters VI and VII.

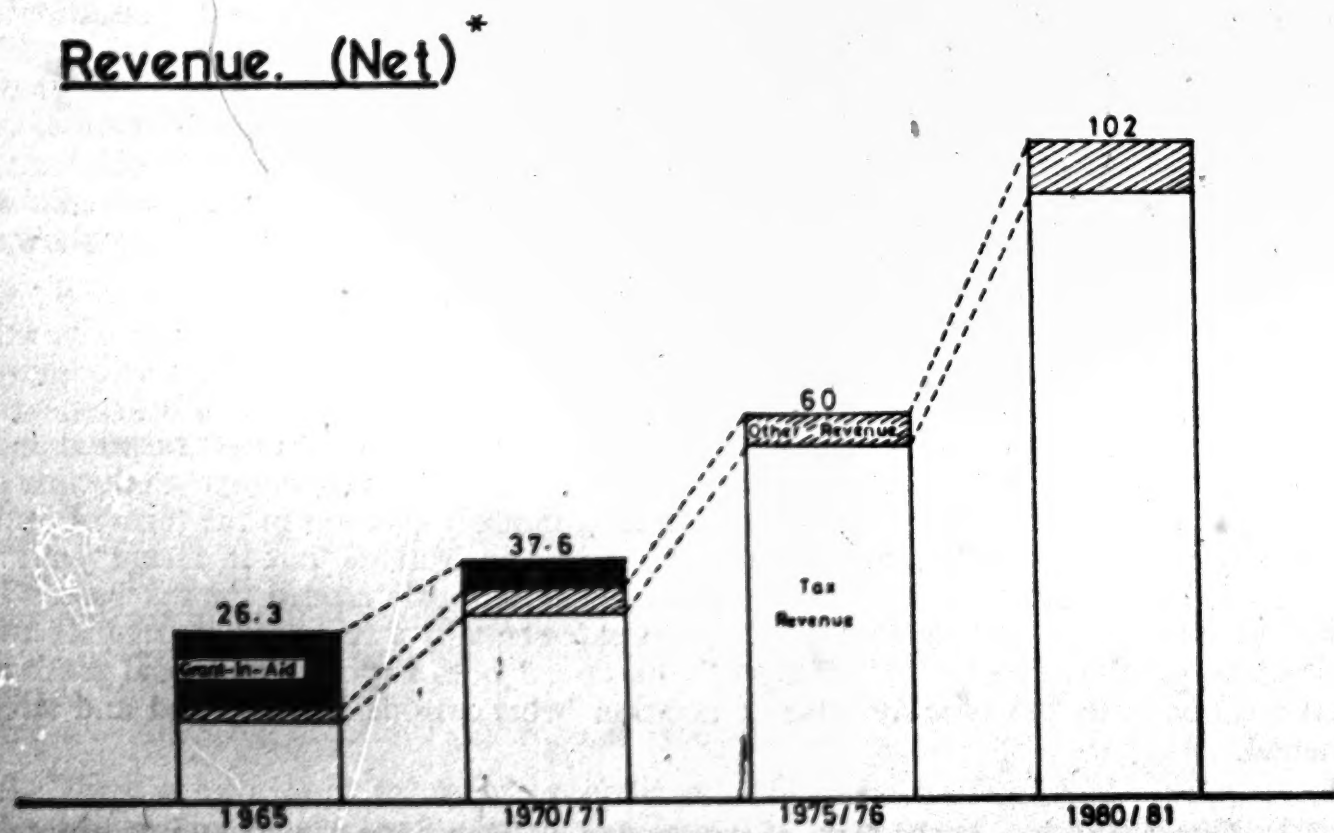
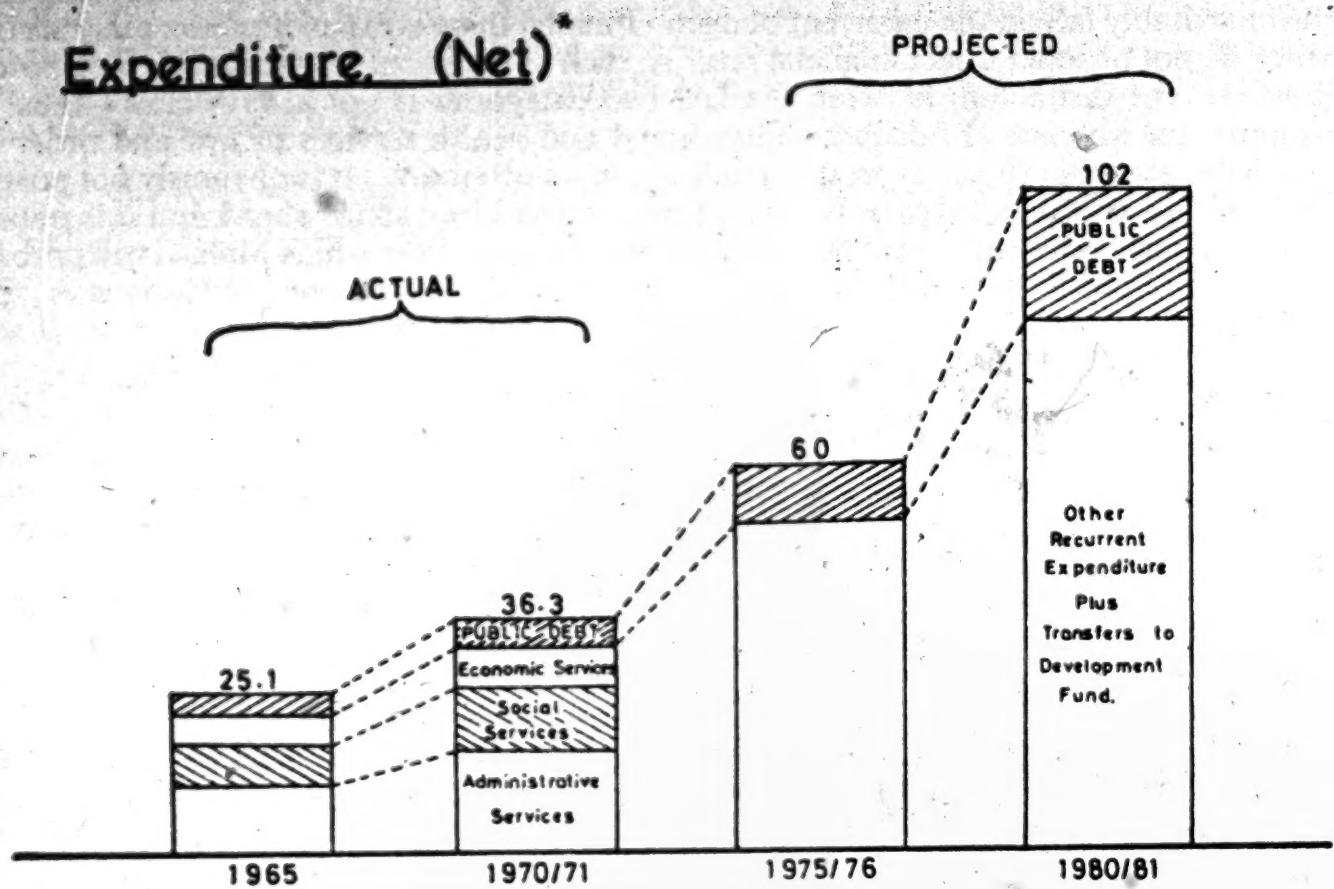
3.2 Taxation

3.2.1 The Government's fiscal policy is to minimise the impact of direct taxation and to concentrate the main tax effort on indirect taxation, in order to encourage production and savings, particularly in the rural sector. In fact, indirect taxation in the form of import duties has always been a major source of revenue in Malawi, but in recent years the establishment of import substituting industries has seriously eroded the tax base. This was rectified by the introduction of the Surtax (essentially a Sales tax on manufactured consumer goods) in the 1970/71 budget. This covers both imported and local goods and has resulted in the tax base for indirect taxation being considerably widened and strengthened.

3.2.2 Direct taxation, in the form of income tax, will continue to play an important role in taxing companies and the higher income groups. Here, the tax base is growing strongly with the general increase in prosperity. The company tax base in particular is expanding

Graph VIII. 2 Revenue Account

K.million.



* Net of Appropriations-in-Aid. Estimates of Appropriations-in-Aid and Adjustments have been made for 1965 & 1970/71 to Align the Figures with Current Practice.

rapidly, as the Government has tried to avoid unnecessary tax incentives for newly established industries. There are certain initial investment allowances but no tax holiday arrangements, as it is felt that all worthwhile investments in Malawi should earn an adequate return to investors even after tax.

3.2.3 Looking ahead, it has already been mentioned above that the Government does not feel that it is practicable or desirable to maintain the very rapid increase in rates of taxation achieved in recent years. On the other hand, if even the minimal needs for recurrent expenditure are to be met and some progress is to be made in providing resources from revenue for the Development Fund, there must be a further increase in the overall taxation level. This is projected to rise to some 16 per cent of GNP by 1980/81, an increase of some 5 points over the decade compared with the 4 points achieved between 1965 (6.7 per cent) and 1970/71 (10.7 per cent). However, as the income elasticities of current taxes are fairly high, at least the major part of this target will be met by natural growth. At worst only a small part of the required increase over the decade will have to come from increased rates or extensions of the tax base and this mainly in the next few years as the grant-in-aid is finally eliminated. Over this period, therefore, it is not envisaged that the need for revenue will in itself demand any major changes in the taxation system.

3.2.4 The foregoing figures are summarised in Table VIII.3:—

TABLE VIII.3. MALAWI GOVERNMENT REVENUE ACCOUNT

Revenue				Expenditure	<i>K million Constant prices adjusted</i>		
	1971/72	1975/76	1980/81		1971/72	1975/76	1980/81
Taxation .	33.3	55	94	Public Debt .	5.2	9	20
Other revenue .	3.5	5	8	Economic Services .	6.4	51	82
Grant-in-Aid .	3.6	Nil	Nil	Social Services .	11.4		
				Administrative Services .	17.4		
				Transfers to Dev. A/c. .	Nil		
	<u>40.4</u>	<u>60</u>	<u>102</u>		<u>40.4</u>	<u>60</u>	<u>102</u>

As explained in Chapter IX these projections are in terms of constant prices adjusted for expected changes in Malawi's terms of trade but not for general inflation.

3.3 Technical Assistance

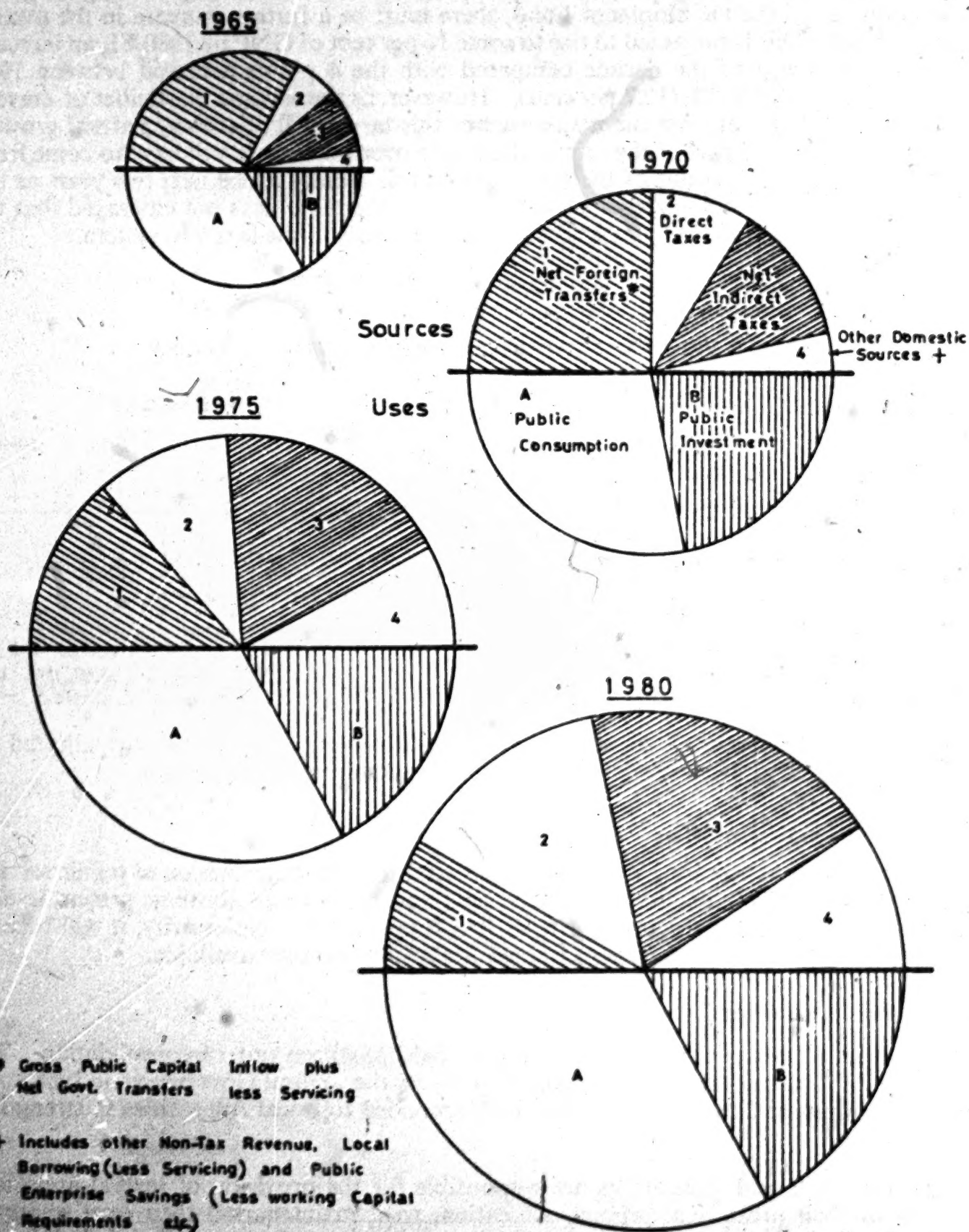
3.3.1 Technical assistance plays a small but vital part in the provision of public services but it is not believed likely that it could be significantly increased above its present level of some K7 million a year (including OSAS/BACS personnel). Necessarily, it will become more specialised as more and more trained Malawians become available.

3.4 Local Authorities

3.4.1 In recent years the main effort in this field has been one of consolidation. The collection of local *per capita* rates was taken over by the Central Government in 1968 and a number of Central Government officers were seconded to Local Authorities to strengthen their staffing.

3.4.2 Though Local Authorities are responsible for the provision of several important services in their areas (e.g. primary education, road maintenance) their own resources are strictly limited. Their own revenue (including the rate collected on their behalf by the central government) covers only about a third of their net expenditure, the rest being financed by transfers from the Central Government. Most of this "own revenue"

Graph VIII 3. Public Sector Financing



(mainly property rates) is collected by the municipal councils, so that, in fact, the district councils are almost wholly dependent on Central Government transfers.

3.4.3 The problem of Local Authority finances is continually under review; it is of course closely linked to the question of the role Local Authorities must play in the provision of services, particularly in project areas after the investment phase is over. No major changes in the balance of provision of services between Central and Local Government is presently contemplated. Transfers to Local Authorities are included in the forecasts of Central Government expenditure; therefore administrative changes in the allocations of responsibilities for providing existing services will not affect the level of resources required, except to the extent that efficiency was increased or decreased.

4 Conclusions

4.1 Table VIII.4 summarises the Chapter by showing the projections which have been developed above in the form of the public sector's components in the national accounts and the balance of payments. These figures provide some of the building blocks for Chapter IX.

TABLE VIII.4. SUMMARY OF PUBLIC SECTOR PROJECTIONS

<i>National Accounts</i>	1970	1975	1980	<i>K million</i>
Government Consumption .	41.9	63	95	
Public Investment .	25.6	33	50	
Net Indirect Taxation .	17.2	35	55	
Public Savings .	-12.1	-2	10	
<i>Balance of Payments</i>				
Public Sector Capital inflow .	32.4*	27	32	
Public Debt Amortisation .	3.3	5.9	13.1	
Government Transfers (net) .	11.6	8.3	8.3	
Public Sector net factor payments abroad .	1.1	3.1	3.3	

*includes K10m. for Nacala final payment, of which only K3.8 m. is estimated to have been spent in 1970.

4.2 It must be emphasised that all these projections are merely an indication of the way things may be expected to go at this moment in time. During the decade the budgetary situation will no doubt vary from year to year, due to the success or failure of harvests, the pattern of debt servicing, the availability of external finance for specific projects, and so on. But the overall picture of public finance shown in this chapter, which is characterised by heavy dependence on external borrowing for financing investment and a great scarcity of current revenue for financing recurrent expenditure, cannot be expected to change radically over the decade.

4.3 Nevertheless, the progress over the decade towards true economic independence revealed in Table VIII.4 above is quite clear. In 1970, official capital inflow in the form of foreign loans (adjusted for the Nacala transaction) more than covered public fixed investment, while net transfers covered more than a quarter of Government consumption. By 1980 less than two-thirds of public investment will have to be financed from abroad, while net transfers (mainly technical assistance) will amount to less than 10 per cent of Government consumption. The scope for continued success in the efforts to make the economy of Malawi more self-reliant, as revealed in Table VIII.4 and Graph VIII.3, is quite clear.

Chapter IX

National Income and Outlay

1 The Basic Model

1.1 It has been emphasised in previous chapters that economic development in Malawi must come primarily from improvements in agricultural productivity. Considerable sums are to be invested in specific projects and in supporting infrastructure facilities, especially transport, which will enable the level of output to rise more rapidly than would otherwise be possible. However, agricultural projects will directly affect only a minority of the population and even fewer will be able to find wage employment. It is therefore essential to ensure a general improvement in the productivity of agricultural small-holders if the production targets set out in Chapter III are to be realised. These targets are crucial to the export projections contained in Chapter II, which in turn are an essential element in the macro-economic projections discussed below. The central position occupied by exports and, in particular, agricultural exports, is due to the nature of Malawi's resource endowment and to the need to overcome the limitations imposed by the size of the domestic market, as explained in Chapter I. At the same time, the level of agricultural output will largely determine the rate of growth in the manufacturing sector of both demand-based and supply-based industries, in view of its effect on both raw material supply and consumer demand, and hence on the distributive and other service sectors of the economy.

1.2 The success of Malawi in developing its economy during the next decade will clearly stand or fall on the performance of the ordinary people in the villages—agricultural smallholders, cattle herders and fishermen. This has important implications for economic policy in a number of sectors. These have been mentioned in the appropriate parts of the *Statement* but are of sufficient importance to justify their rehearsal in summary form as an introduction to the general assessment of Malawi's growth prospects.

1.3 It is obviously necessary to maintain a balance between intensive investment in projects and extensive improvements of smallholder agriculture, as explained in paragraph 1.8 of Chapter III. But efforts by the Government to expand extension services and improve the infrastructure will be of no avail without the full co-operation of the villagers themselves: this cannot be expected to be forthcoming unless general economic policy is designed to protect their interests.

1.4 This requires action on a number of fronts. The first priority is to ensure adequate supplies of basic foodstuffs, principally maize, and it is for this reason that a central place has been accorded to maize output in agricultural policy. Experience in 1970, when the maize harvest was affected by adverse climatic conditions, showed how quickly food shortages are reflected in increased prices, as shown in Chapter V, paragraph 4.1.8. It is clear that maintenance of sufficient supplies of basic foodstuffs to meet the needs of the population is a *sine qua non* of price stability. This in turn is an essential element in the protection of the interests of the rural community, in view of the fact that their incomes are generally lower than those in urban areas and hence they would suffer more severely from price inflation.

1.5 For the same reason, the policy of wage restraint is an integral part of Malawi's development strategy. This has two facets: since wage earners are mainly concentrated in urban areas, wage inflation would benefit the urban minority at the expense of the rural majority or, in other words, would discriminate in favour of the higher income groups

(even though many of these are badly off by world standards); secondly, wage inflation would set in motion a spiral of cost-push price inflation, which would reduce the real incomes of agriculturalists and which would not be compensated since their earnings are determined by world market prices for their products.

1.6 The general requirement that living conditions in rural areas should be raised relative to those in urban areas has further connotations. It has a direct impact on produce marketing policy, which should aim to ensure that growers receive the full value realised for their crops on the world market, subject to the need to cover marketing costs and to cushion producers against random price fluctuations. At the same time it calls for an expansion and improvement of merchandise distribution in the rural areas, both to meet the consumption needs of the rural population and to provide them with a wider range of income earning opportunities. In this regard the policy of moving as close as possible to country-wide national prices for basic commodities can be seen to be part and parcel of the general strategy, provided that action is taken to prevent undue distortions appearing in the price structure and hence in the allocation of resources.

1.7 It will be immediately apparent that the effect of policies in the social sector must also be considered in the light of the requirement to improve conditions in rural areas. The implications for education, health and housing policies are fully set out in Chapter VI and VII, but it is worth re-emphasising that Government will concentrate on inculcating skills which are relevant to the task of developing the economy and on attempting to ensure that poor health is not a serious constraint on output. In the case of housing, a balance has to be struck between the need to provide attractive and sanitary accommodation for urban dwellers and the even more vital need to avoid encouraging urban migration, especially by the more intelligent and enterprising sections of the rural population.

1.8 Until recently Malawi has suffered from the "primate city syndrome" with one moderately large urban centre (Blantyre) nearly ten times as big as the next largest town. This trend is now being reversed with the siting of the New Capital City at Lilongwe in the Central Region and with the creation of new urban growth points such as Liwonde. The new industrial location policy, which requires all new "footloose" industries to be sited in Lilongwe, is also helping to bring about a more even distribution of urban population. This will have beneficial effects on rural areas, in that it will provide them with easier access to urban facilities. With a larger number of smaller urban centres spread around the country, the contrast between urban and rural living conditions will become less pronounced. However, it will still be necessary to avoid making town life appear too attractive if disruptive rural emigration is to be avoided.

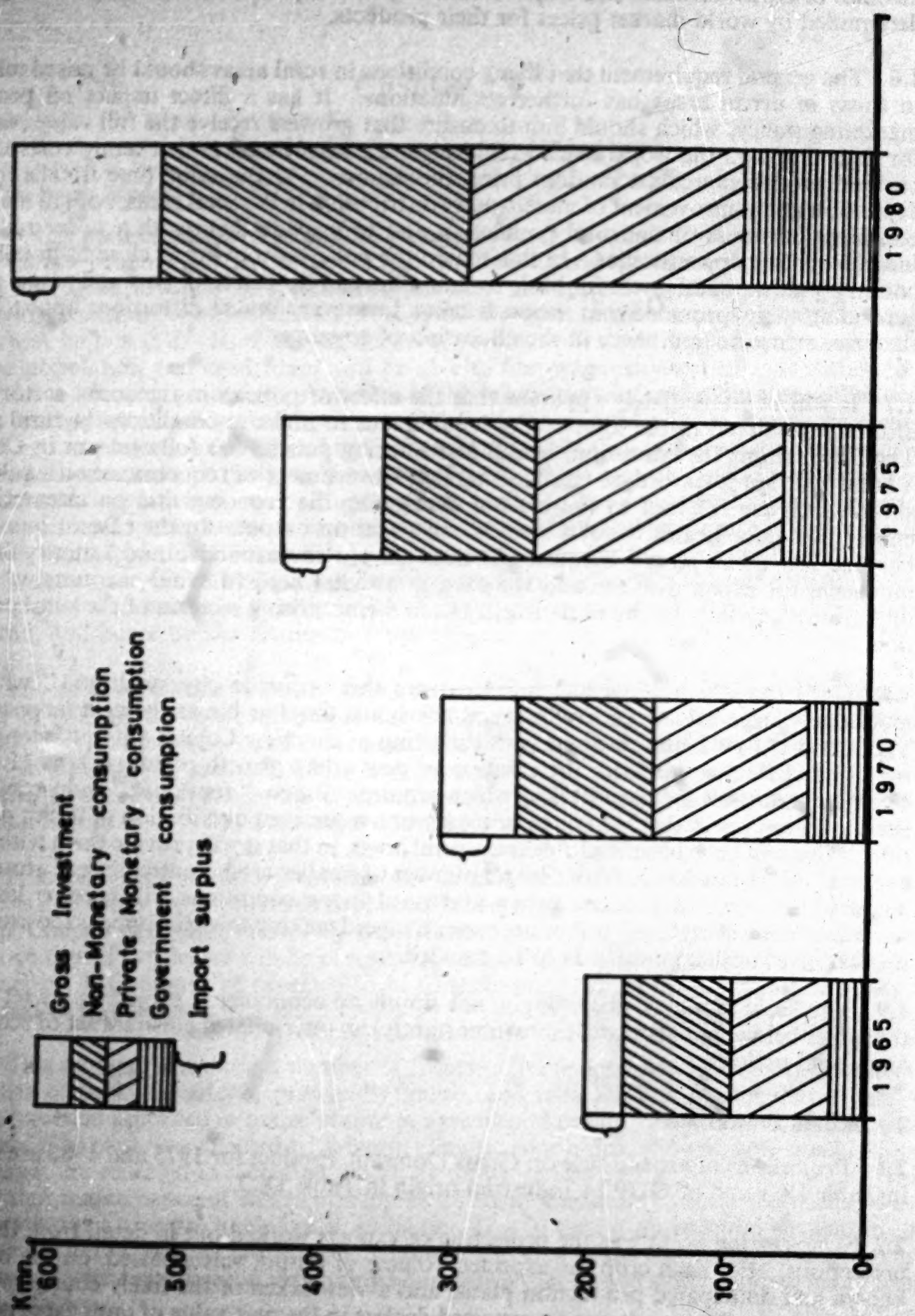
1.9 The basic model is, accordingly, not simply an econometric projection as set out in the tables below, but also (and more importantly) an inter-related coherent set of economic and social policies.

2 Income Projections

2.1 Projections of expenditure on Gross Domestic Product for 1975 and 1980 are set out in Table IX.1 and of GDP by industrial origin in Table IX.2.

2.2 The starting point was the projection of exports worked out in detail from the crop projections. For each crop the expected volume of output was assessed, on the basis of known and anticipated production plans, and a view taken of the likely course of world market prices. The result was an expected decline in the unit value of crop exports of the order of 2 per cent a year. To the crop export projections were added estimates of probable exports of manufactures, based on discussions with the industries concerned, and of invisibles including tourism. Projections of exports of manufactures include expected sales of pulp and paper products from the Vipya for 1980, but exclude bauxite, alumina or

Graph IX.1 Expenditure on G.D.P.



aluminium, since no quantitative data are as yet available. It should be stressed that if it proves possible to exploit the Mulanje bauxite deposits by 1980, the whole position will be changed dramatically. For example, it has been suggested that Malawi might eventually achieve an output of 125,000 tons a year of aluminium. This would mean additional exports at present prices of K500 per ton of K62.5 million—i.e. a 50 per cent increase on present projections.

2.3 Econometric studies have established a close statistical relationship between the value of crop exports and total GDP. These have been used to project GDP at factor cost in the monetary sector and non-monetary output has been assumed to grow *pari passu* with population—i.e. at 2½ per cent per annum. To arrive at GDP at market prices the estimate of net indirect taxes derived in Chapter VIII must be added. The increase in net indirect taxes as a percentage of GDP results from the objective of increasing the tax effort over the decade and the Government policy of relying mainly on indirect taxation in achieving this objective, as described in Chapter VIII. This market price estimate is therefore based on expected future trends in export prices without allowing for any general inflationary pressures, either internal or external. By implication, the price forecasts assume that any general inflationary pressure from external sources will affect both export and import prices equally, without affecting the terms of trade. It is further assumed that Malawi's economic policies will be successful in resisting internal inflation. These policies are therefore crucial to the projections, since internally generated inflation will not be compensated by increased export prices and hence will reduce the real rate of growth. They would also upset the import surplus projections through their effect on the income elasticities of supply for exports and demand for imports.

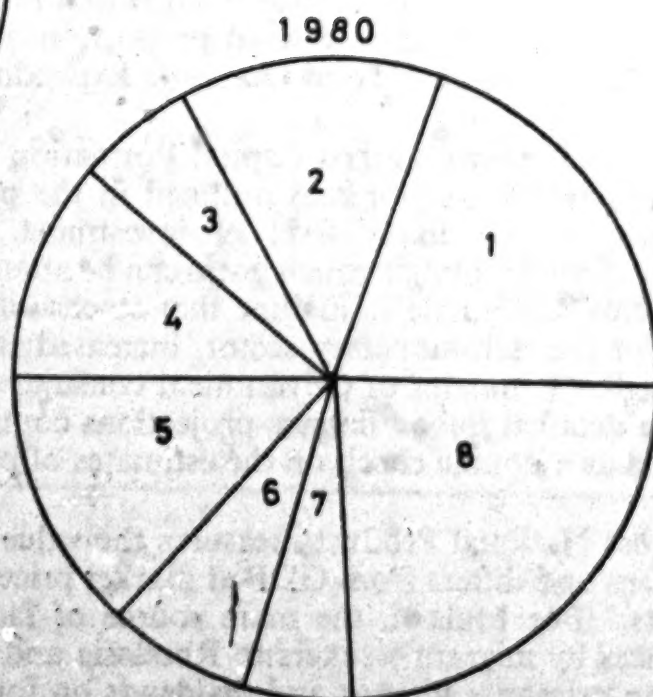
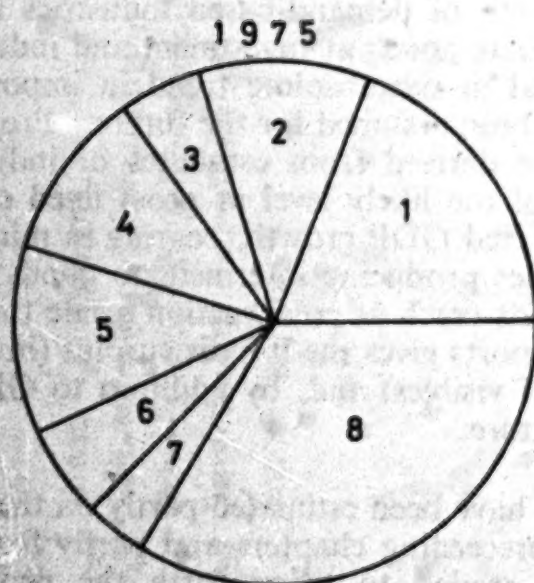
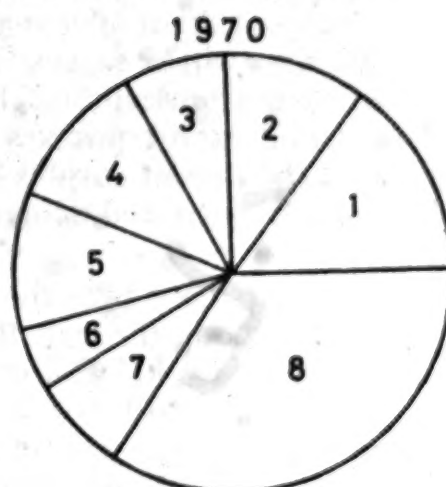
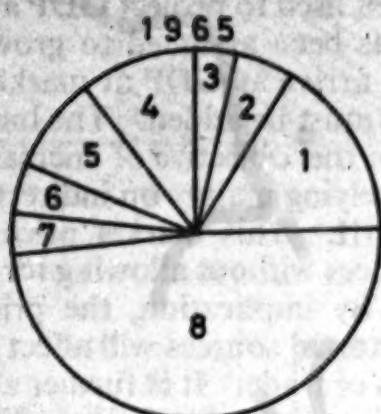
2.4 In recent years imports have been the resultant of two opposing trends—a reduction in imports of consumer goods through the growth of demand-based industries and a rapid increase in imports of capital and intermediate goods as investment and industrial production have expanded. 1970 saw a reversal in the absolute trend in imports of consumer goods and a slightly upward trend has been assumed for the future. Projected imports of capital and intermediate goods were derived from estimates of industrial growth (discussed in detail in Chapter V) and of the likely level of gross fixed capital formation which will be needed to give the projected GDP growth, bearing in mind the expected growth of import—substituting industries producing intermediate goods (such as plywood and paper products) and capital goods (such as construction grade timber). The difference between projected exports and imports gives the import surplus (invisible imports being estimated as a fixed proportion of visibles) and, by addition to GDP at market prices, projected Total Domestic Expenditure.

2.5 Figures for Gross Fixed Capital Formation have been estimated partly on the basis of the investment programmes outlined in the preceeding chapters and partly from an assessment of the likely level of investment needed to bring forth the projected growth in output. Only a rough guess can be attempted at the likely level of stock changes, but it seems reasonable to assume that stocks will have to grow as the volume of trade rises. For the non-monetary sector, increased stocks mainly arise from growth in live-stock herds. Estimates of Government consumption and indirect taxes are derived from the more detailed public finance projections contained in Chapter VIII, which have also been used as a double check on the estimates of public sector investment.

2.6 Gross National Product measures the value of the income accruing to persons and institutions and differs from GDP at market prices by the net movement of factor income payments. For Malawi, the main source of factor income receipts takes the form of remittances by migrant workers in Rhodesia and South Africa, while factor income payments are primarily interest and dividends on foreign loans and investments. Although migrants remittances almost doubled between 1965 and 1970, interest and dividend payments increased even more rapidly in view of the high level of foreign borrowing and this

Graph IX.2 G.D.P. by Industrial Origin.

1. Agriculture
2. Manufacturing
3. Construction, Power & Water
4. Government
5. Distribution, Banking & Finance
6. Transport & Communications
7. Other n.s.
8. Total Non-Monetary



Scale: 1 sq. cm. = K10 mn.

trend is expected to become more marked in future. The bases for the figures for Net Factor Payments Abroad are discussed more fully in the balance of payments section below and it need only be noted at this stage that this item is expected to rise slightly more rapidly than GDP. Deducting this from GDP at market prices gives the projections for GNP.

2.7 As mentioned above, population is expected to grow at the rate of 2½ per cent a year and mid-year population projections are shown in line 11 of Table IX.1. Dividing these into the GNP figures gives average income per head, which is expected to rise from K59.9 in 1970 to K76.6 in 1975 and K102.2 in 1980, equivalent to an average annual growth rate over the decade of 5.5 per cent.

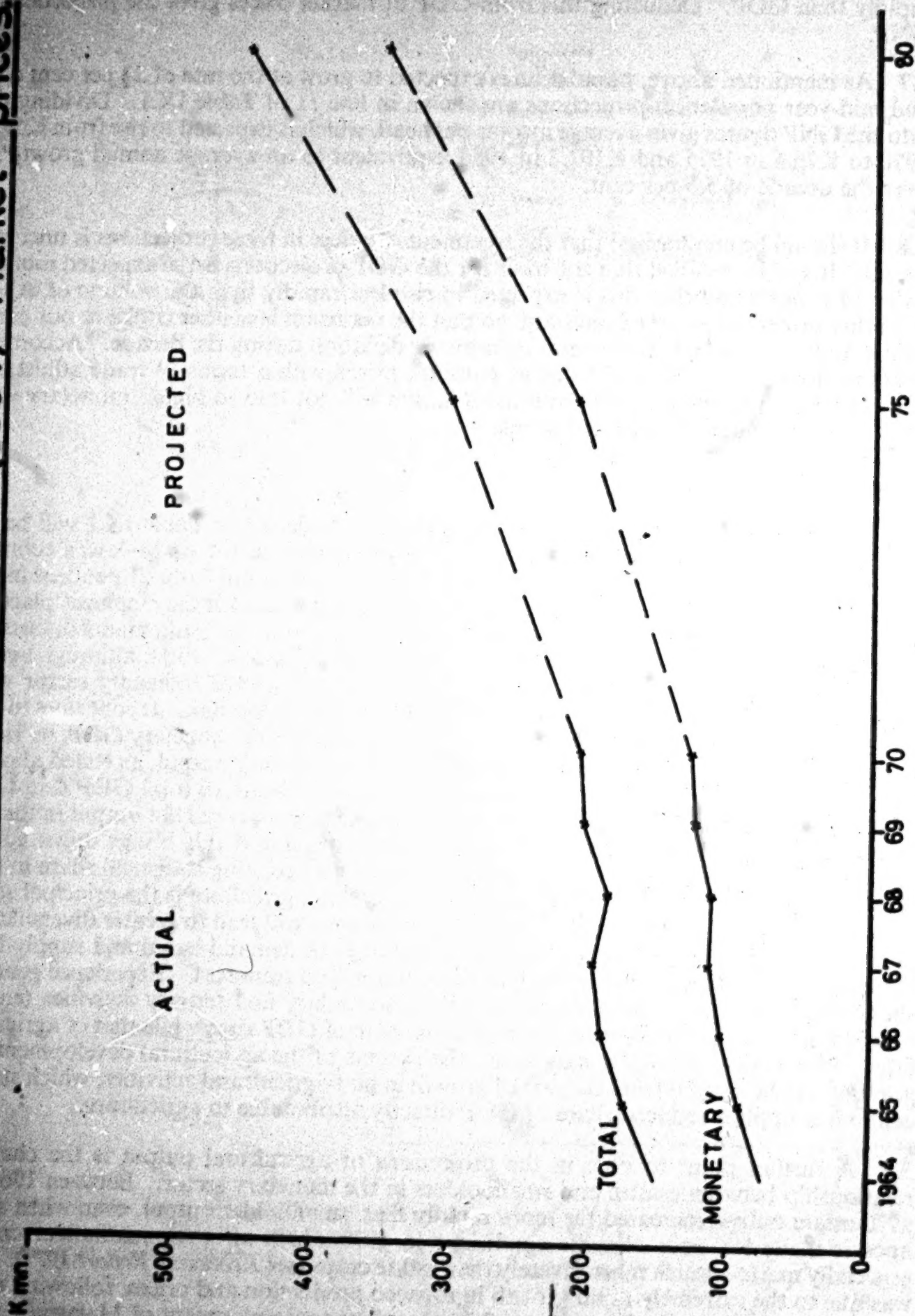
2.8 It should be emphasised that the treatment of prices in these projections is unconventional. It will be recalled that the basis for the GDP projections is the expected monetary value of exports and that this is expected to rise less rapidly than the volume of exports. All other prices are assumed constant, so that the net result is neither constant nor current prices, unless we assume no general inflation or deflation during the decade. Accordingly these projections can be said to be at constant prices with a terms of trade adjustment: but it must be remembered that internal inflation will not lead to higher monetary values but to lower growth rates in real terms.

3 Output Projections

3.1 Table IX.2 shows how the GDP at factor cost projected in Table IX.1 will be produced. In 1980 agriculture will still be the largest single sector of Malawi's economy, but it will be noted that its share of total GDP is expected to fall from 51 per cent in 1970 to just over 40 per cent in 1980. This may seem inconsistent with the emphasis placed on agricultural development throughout this *Statement* and with the basic model discussed in the first section of this Chapter. This is not so, for two reasons. First, although agriculture's share of total GDP falls markedly, this is not true of the monetary sector where agriculture actually increases its share during the first quinquennium. It continues to grow rapidly even after 1975, but suffers a slight drop in its share of monetary GDP in view of the even more rapid growth of manufacturing. Non-monetary output, as stated above, is only expected to grow *pari passu* with population and its share of total GDP drops from 40 per cent in 1970 to less than 25 per cent by 1980. The greater part of output in the non-monetary sector—86 per cent—is necessarily agricultural and this brings down agriculture's share of total GDP as time goes on. Secondly, a declining statistical share in GDP is not in any case inconsistent with the assumption that agriculture is the principal source of economic growth. The growth in agricultural output will lead to greater diversification of the economy through its effect on the output of both demand-based and supply-based industries and service industries such as distribution and transport. Experience generally shows that the rate of this induced growth in secondary and tertiary activities tends to exceed that in the primary sector, so that their share of GDP rises while that of agriculture falls. Paradoxical though it may seem, the success of the agricultural development programme can be gauged from the rate of growth in non-agricultural activities, which statistically must imply a reduced share of GDP directly attributable to agriculture.

3.2 A further point to note in the projections of agricultural output is the changing relationship between estates and smallholders in the monetary sector. Between 1965 and 1970 estate output increased far more rapidly than smallholder output, even when allowance is made for poor climatic conditions in 1970 which affected smallholder crops—especially maize—much more severely than estate crops (see *Economic Report 1971*). This was due to the extremely rapid growth in tobacco production and prices, following on the elimination of Rhodesia from the market, as well as to development of Malawian-owned estates. For the future, however, a less rapid rise is foreseen in the value of tobacco output and faster growth rates for smallholder crops as the various agricultural projects outlined in Chapter III come into full production. Thus, during the coming decade, the past trend

Graph IX.3 G.D.P. at constant (1964) Market prices.



is expected to be reversed, with the estates' share falling while the smallholders' share rises. In absolute terms, output from estates is expected to double and that from smallholders to treble.

3.3 As mentioned in paragraph 2.2 above, insufficient information is at present available to attempt even a rough estimate of the likely future output of the mining sector. The nominal figures shown in Table IX.2 are based on known plans to exploit minor deposits of monazite, etc., and no allowance has been made for the exploitation of bauxite. On the possible export figures quoted above, net output could amount to up to K20 million and would have ramifications throughout all sectors of the economy. As stated elsewhere, it is better to avoid wild guesses at the possible effects of bauxite development on the economy of Malawi until firm data become available, while bearing in mind that the projections contained in this *Statement* could prove to be a serious understatement.

3.4 The derivation of the projections for manufacturing output has been discussed in detail in Chapter V, which also indicated the expected growth in the construction industry and in output of electricity and water. Similarly, the public services (including education and health) are dealt with in Chapter VIII and the projections for the transport sector are derived from the detailed discussion in Chapter IV.

3.5 Less precise guidance was available with regard to distribution and other services. Experience throughout the world indicates that output from these activities is notably income-elastic and tends to rise more rapidly than GDP. In Malawi this was not the case between 1965 and 1970, for a number of reasons. In the distribution sector, growth has been retarded by institutional factors as outlined in Chapter V, but these are now being remedied and a faster rate of growth can be looked for in the future. This will be reinforced by the more rapid increase in the incomes of agricultural smallholders, mentioned above, which will both require and induce greater commercial activity in the rural areas. The largest single item in the "other services" category is domestic service. This is an occupation which tends to rise slowly, if at all, as incomes rise and for this reason it seemed reasonable to assume a declining share of GDP for this sector.

3.6 The rates of growth in GDP and GNP resulting from the projections in Tables IX.1 and IX.2, both in aggregate and per head, are shown in Table IX.3.

TABLE IX.3: RATES OF GROWTH (per cent per annum compound)

		1964-70*	1970-75	1975-80	1970-80
GDP at factor cost:	aggregate	5.3	7.2	8.5	7.9
	per head	2.8	4.7	6.0	5.4
GDP at factor cost:	aggregate	7.6	9.8	11.0	10.4
(monetary sector only)	per head	4.1	7.3	8.5	7.9
GDP at market prices:	aggregate	5.8	7.8	8.5	8.2
	per head	3.3	5.3	6.0	5.7
GNP at market prices:	aggregate	6.0	7.6	8.5	8.0
	per head	3.5	5.1	6.0	5.5

*adjusted to constant prices basis

4 Savings and Investment

4.1 During the first few years of Independence, Malawi was unable to generate sufficient output to meet even the needs of public and private consumption, low though they were. Until 1969 consumption exceeded GNP each year by over K2 million, but as Table IX.4 shows, national savings became positive in 1970, though still only a quarter of the country's investment requirements and only one-twentieth of GNP.

Graph IX.4

Investment Resources

1. Net National Savings

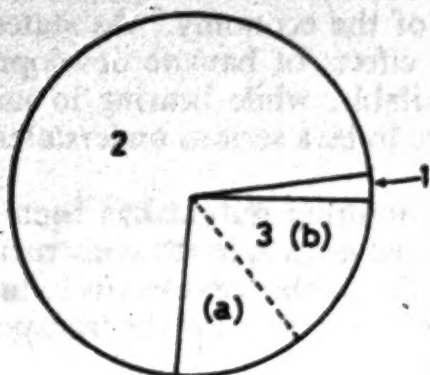
2. Net Foreign Transfers

3. Capital Inflow

(a) Public

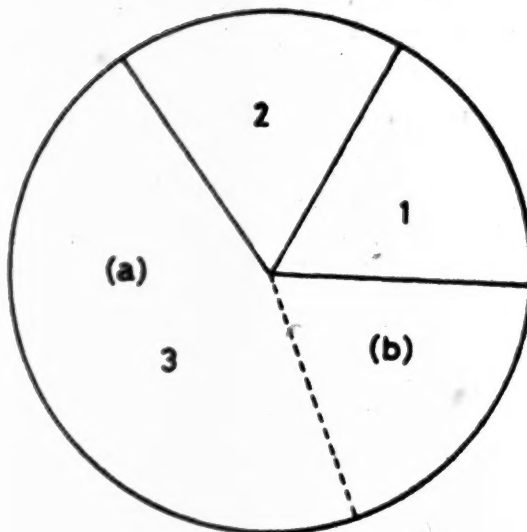
(b) Private

1965

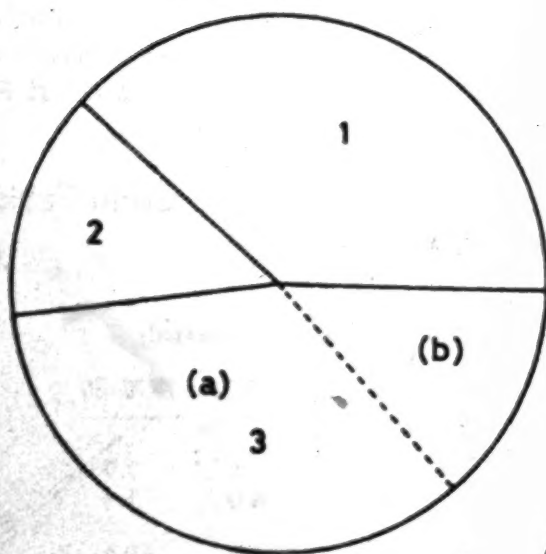


N.B. 1 Negative in 1965

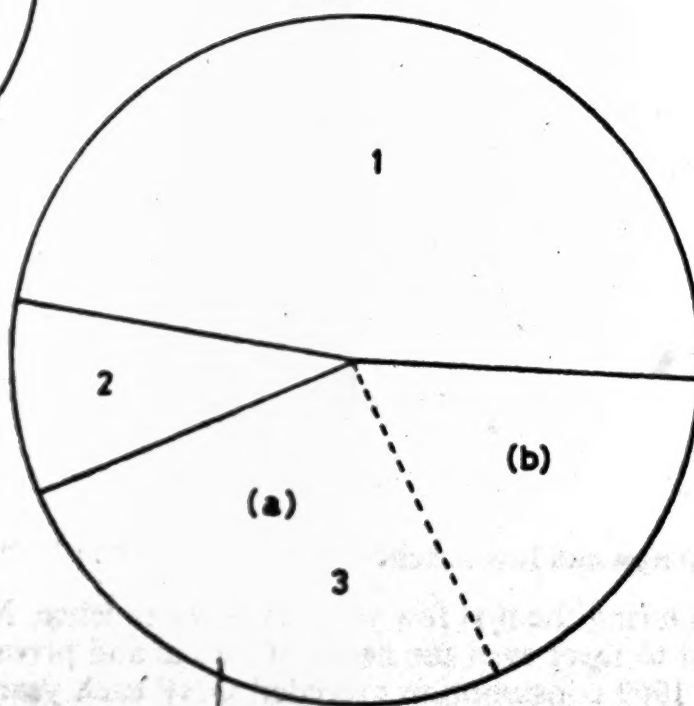
1970



1975



1980



Scale: 1sq. cm. = K2mn.

4.2 The remaining three-quarters of investment finance has been obtained from external sources in the form of grants, loans and direct private investment. These are discussed in more detail in the following section, but it is apparent from the 1970 column of Table IX.4 that the effects of such heavy reliance on foreign capital are already being felt in the form of external debt amortisation and factor income payments abroad.

4.3 It would clearly be contrary to Malawi's basic economic objectives to allow such a heavy relative degree of dependence on foreign sources of finance to continue and the share of national savings as a percentage of GNP is expected to rise from 5 in 1970 to 8 in 1975 and nearly 11 in 1980. To achieve this will require considerable restraint in consumption, especially by the public sector, but the proposals outlined in Chapter VIII show that this can be done while still providing modest improvements in the social services.

4.4 The projected increased rate of savings will have a number of beneficial effects. First, it will reduce our dependence on foreign finance so that by 1980 nearly half of Malawi investment requirements will be locally financed. This will help to strengthen the basis of the projections made in this *Statement*, since there can be more confidence of securing local resources than of attracting foreign capital. In absolute terms, however, the volume of foreign capital required will continue to expand and it is hoped that a considerable proportion will continue to be obtainable on "soft" loan terms.

4.5 Secondly, the increased share of local investment will reduce the relative size of the outflow in debt amortisation and factor income (interest and dividends) payments abroad. It will be noted from Table IX.4 that there is a rapid increase in the former, but this is due to the impact of past borrowings mainly in the public sector.

4.6 Thirdly, as the volume of foreign trade expands, it will be necessary to increase the absolute size of the foreign reserves in order to maintain their relative size and provide sufficient liquidity to deal with the effects of seasonal fluctuations and leads and lags in payments and receipts. At the end of 1970 foreign reserves stood at K21.8 million, equivalent to 3.8 months cover of the value of merchandise imports during the year. It is felt that three months cover is the minimum safe level for the reserves and that four months would be more comfortable. Hence Table IX.4 assumes that it should be possible to add K2 million a year to the foreign reserves up to 1975 and K3 million a year up to 1980, which will provide four months' cover. These additions to the reserves will be partly financed by expected future allocations of Special Drawing Rights by the International Monetary Fund, but in the final analysis depend upon increases in the savings ratio.

4.7 Comparing the increase in GNP shown in Table IX.1 with the increase in national savings in Table IX.4, it can be seen that the marginal propensity to save is expected to rise from an average of 11.7 per cent between 1970 and 1975 to 15.3 per cent between 1975 and 1980. That is to say, from each additional Kwacha of income generated and retained within Malawi, nearly 12 tambala will be saved during the first quinquennium rising to over 15 tambala in the second.

5 Balance of Payments

5.1 The balance of payments projections implied by items in the preceding tables are set out in Table IX.5. In 1965, the first full year of Independence, Malawi achieved a small surplus on its balance of payments on current account, but this quickly disappeared and from 1966 onwards the current account has shown a negative balance. The reasons for this are neither surprising nor distressing. In 1965 gross fixed capital formation was only 11 per cent of GDP at market prices (Table IX.1.1) and the grant-in-aid to meet the budgetary deficit reached a record high level of K11.9 million. As investment increased, so did imports of capital goods, while Government's success in reducing the budgetary

deficit reduced the grant-in-aid and hence the net credit on Government transfers. However, since the level of investment was almost wholly determined by the volume of long-term capital receipts, the overall foreign exchange position was usually balanced without having recourse to drawing on the foreign reserves. In fact, since 1967 it has been possible to add to the reserves and, as mentioned above, they now stand at nearly four months cover of merchandise imports.

5.2 It is therefore true to say that Malawi has not suffered from a balance of payments constraint in implementing its development programme, because of the availability of foreign capital. However, increased borrowings must lead in time to increasingly severe outflows of factor income and debt repayments, as shown in lines 3.2 and 7.2.2 of Table IX.5. As explained in Chapter VIII, the forecasts of future capital receipts by Government assume that it will be possible to obtain the same proportion on "soft" loan terms as in the past; provided this is so, and a substantial proportion of private foreign capital continues to be re-invested, there is no reason why Malawi should not be able to service its foreign debt without running into balance of payments problems.

5.3 The derivation of the projections of exports and imports, both visible and invisible, has already been explained in Chapters II and V, but the assumptions underlying the figures shown in respect of factor income and transfers need to be considered. Factor income payments consists principally of interest and dividends to foreign lenders and investors, discussed above, and hence show a fairly rapid increase. Receipts, on the other hand, are expected to decline, since these largely consist of migrant workers' remittances and it would be inconsistent not to expect a drop in the number of Malawians forced to seek work outside the country while predicting a relatively rapid rate of economic growth within Malawi. However, the rate of decline in factor income receipts is expected to be slow, since the drop in numbers of migrant workers will be partially compensated by rising average earnings.

5.4 Turning to transfers, private outflows are small, being mainly remittances by expatriates, but some increase is to be expected. It will be noted that there has been a major decline in inward transfers on Government account, which reflects the reduction in the budgetary grant-in-aid. As mentioned in Chapter VIII, this will be eliminated entirely in 1973; thereafter the only receipts will be in the form of technical assistance payments, which are expected to remain constant.

5.5 Although the expected increase in national savings will reduce Malawi's relative dependence on foreign capital, the absolute sums required will increase in both the public and private sectors. The projections for the years 1975 and 1980 shown in lines 7.1.1 and 7.2.1 of Table IX.5 are derived from a total inflow over the decade of K125 million private investment and up to K275 million public borrowing and grants. Whether sums of this magnitude are forthcoming will depend on the general level of economic activity, treatment of foreign investment and the supply of "bankable" projects, as well as on Malawi's ability to service foreign loans in the future. It should be clear from the information contained in this *Statement* that Malawi should be able to satisfy all these criteria.

6 Conclusion

6.1 This *Statement* has attempted to set out in some detail the economic and development policies which the Malawi Government proposes to follow during the coming decade. In order to give more precision to these, and to draw out their implications, an indication has also been given of the likely magnitudes of the main economic parameters, such as output in the main sectors, GDP, GNP, investment, exports and imports, capital flows and Government revenues. It must be emphasised that all these projections are illustrative only, even though every effort has been made to make them internally consistent and empirically realistic. They do not constitute a development *plan* in the conventional sense, nor a specific commitment by the Government.

6.2 Since 1967, as mentioned earlier in this *Statement*, the operational investment planning document of the Malawi Government has been, and will continue to be, the three year "rolling" Development Programme of public sector investment projects which is approved annually by the National Development Council and His Excellency the Life President. In these Programmes significant short-term variations from the relative magnitudes set out in this *Statement* are only to be expected. This is because in the formulation and updating of the Development Programme every effort is made to ensure as far as possible that projects are screened through a careful process of economic appraisal, where this is appropriate, and consideration of all possible alternatives. To this end the Government has developed its own methodology of economic appraisal which is both sophisticated enough to cater for the heterogeneity of projects in different sectors, and simple enough for ready practical application. At the same time there is full awareness of the dangers of attempting to fit projects, particularly those submitted for external financing, into a mould which facilitates simple quantitative appraisal but which may reduce their real value to the economy. In other words it is recognised that the conventional techniques of economic appraisal have an important part to play in the allocation of resources, but that they are of most benefit when used with discretion and in conjunction with a well thought-out framework of general economic and development policies.

6.3 In this way it is hoped that this *Statement of Development Policies 1971-1980* will help to provide a long-term perspective for the three year Programmes and, in particular, show the world that Malawi knows where it is heading and that there can be full confidence in its continued progress.

TABLE IX.1: PROJECTED EXPENDITURE ON GDP

	(K mn.)	Actual		Projected	
		1965	1970	1975	1980
1.	Consumption	175.2	252.9	354	519
1.1	Monetary	95.0	154.3	242	393
1.1.1	Government	26.8	41.9	63	95
1.1.2	Private	68.2	112.4	179	298
1.2	Non-Monetary	80.2	98.5	112	126
2.	Gross Fixed Capital Formation	19.3	48.6	63	99
2.1	Monetary	17.7	46.4	60	95
2.1.1	Public	13.4	25.6	33	50
2.1.2	Private	4.3	20.8	27	45
2.2	Non-Monetary	1.6	2.2	3	4
3.	Stock Changes:	5.8	6.0	8	10
3.1	Monetary	5.4	5.2	7	8
3.2	Non-Monetary	0.4	0.8	1	2
4.	Total Domestic Expenditure	200.2	307.4	425	628
4.1	Monetary	118.1	205.9	309	496
4.2	Non-Monetary	82.1	101.5	116	132
5.	Import Surplus	-21.4	-36.5	-31	-32
6.	GDP at market prices:	178.8	270.9	394	596
6.1	Monetary	96.6	169.4	278	464
6.2	Non-Monetary	82.2	101.5	116	132
7	Indirect Taxes (net)	-6.9	-17.2	-35	-55
8	GDP at factor cost	171.9	253.7	359	541
9	Net Factor Payments Abroad	-4.3	-4.9	-9	-15
10	GNP at market prices (6-9)	174.5	266.0	385	581
11	Population (000's)	3,925	4,441	5,024	5,684
12	GNP per head (Kwacha)	445	59.9	76.6	102.2

TABLE IX.1.1: PERCENTAGE DISTRIBUTION OF EXPENDITURE ON G.D.P.

(per cent of GDP at market prices)

				<i>Actual</i>		<i>Projected</i>	
				<i>1965</i>	<i>1970</i>	<i>1975</i>	<i>1980</i>
1.	Consumption	.	.	98.0	93.3	89.8	87.1
1.1	Monetary	.	.	53.1	57.0	61.4	65.9
1.1.1	Government	.	.	15.0	15.5	16.0	15.9
	Private	.	.	38.1	41.5	45.4	50.0
1.2	Non-Monetary	.	.	44.9	36.3	28.4	21.1
2.	Gross Fixed Capital Formation	.	.	10.8	17.9	16.0	16.6
2.1	Monetary	.	.	9.9	17.1	15.2	15.9
2.1.1	Public	.	.	7.5	9.4	8.4	8.4
	Private	.	.	2.4	7.7	6.8	7.6
2.2	Non-Monetary	.	.	0.9	0.8	0.8	0.7
3.	Stock Changes	.	.	3.2	2.2	2.0	1.7
4.	Total Domestic Expenditure	.	.	112.0	113.5	107.9	105.4
5.	Import Surplus	.	.	12.0	13.5	7.9	5.4
6.	GDP at market prices	.	.	100.0	100.0	100.0	100.0
6.1	Monetary	.	.	54.0	62.5	70.6	77.9
6.2	Non-Monetary	.	.	46.0	37.5	29.4	22.1
7.	Indirect Taxes (net)	.	.	3.9	6.4	8.9	9.2
8.	GDP at factor cost	.	.	96.1	93.6	91.1	90.8
9.	Net Factor Payments Abroad	.	.	2.4	1.8	2.3	2.5
10.	GNP at market prices	.	.	97.6	98.2	97.7	97.5

TABLE IX.2: PROJECTIONS OF GDP BY INDUSTRIAL ORIGIN

(Kmn.)

		Actual		Projected	
		1965	1970	1975	1980
1.	Agriculture				
1.1	Smallholders (a) Non-Monetary	71.1	88.2	100	113
	(b) Monetary	21.7	26.6	46	78
1.2	Estates and Government	6.4	14.5	22	28
	TOTAL	99.2	129.3	168	219
2.	Mining and Quarrying	0.1	0.2	1*	2*
3.	Manufacturing (a) Non-Monetary	5.3	6.1	7	8
	(b) Monetary	10.0	25.8	40	73
	TOTAL	15.3	31.9	47	81
4.	Construction (a) Non-Monetary	2.7	3.6	4	5
	(b) Monetary	3.9	8.5	12	19
	TOTAL	6.6	12.1	16	24
5.	Electricity, Sanitation and Water	1.3	2.9	5	11
6.1	Public Administration and Defence	13.9	19.1	28	40
6.2	Education	3.1	5.7	9	14
6.3	Health	1.4	1.9	3	6
	TOTAL	18.4	26.7	40	60
7.	Distribution, Banking and Finance	15.2	24.9	41	72
8.	Transport and Communications				
	(a) Non-Monetary	0.5	0.6	1	1
	(b) Monetary	6.5	12.0	21	42
	TOTAL	7.0	12.6	22	43
9.	Other Services n.e.s.				
	(a) Non-Monetary	2.5	3.0	4	5
	(b) Monetary	6.2	10.1	15	24
	TOTAL	8.7	13.1	19	29
10.	GDP at factor cost				
	(a) Non-Monetary	82.1	101.5	116	132
	(b) Monetary	89.8	152.2	243	409
	TOTAL	171.9	253.7	359	541

*Not including bauxite.

TABLE IX.2.1: PROJECTIONS OF MONETARY GDP BY INDUSTRIAL ORIGIN
(Kmn.)

		<i>Actual</i>		<i>Projected</i>	
		<i>1965</i>	<i>1970</i>	<i>1975</i>	<i>1980</i>
1.	Agriculture				
1.1	Smallholders	21.7	26.6	46	78
1.2	Estates and Government	6.4	14.5	22	28
	TOTAL	28.1	41.1	68	106
2.	Mining and Quarrying	0.1	0.2	1*	2*
3.	Manufacturing	10.0	25.8	40	73
4.	Construction	3.9	8.5	12	19
5.	Electricity, Sanitation and Water	1.3	2.9	5	11
6.1	Public Administration and Defence	13.9	19.1	28	40
6.2	Education	3.1	5.7	9	14
6.3	Health	1.4	1.9	3	6
	TOTAL	18.4	26.7	40	60
7.	Distribution, Banking and Finance	15.2	24.9	41	72
8.	Transport and Communications	6.5	12.0	21	42
9.	Other Services	6.2	10.1	15	24
10.	GDP at factor cost	89.8	152.2	243	409

*Not including bauxite.

TABLE IX.2.2: PERCENTAGE DISTRIBUTION OF G.D.P. BY INDUSTRIAL ORIGIN

	% ages Non-monetary sector				% ages Monetary sector				% ages Total GDP			
	Actual 1965	1970	Projected 1975	1980	Actual 1965	1970	Projected 1975	1980	Actual 1965	1970	Projected 1975	1980
1. Agriculture												
1.1 Smallholders:												
(a) non-monetary	86.6	86.9	86.2	85.6	—	—	—	—	—	—	—	—
(b) monetary	—	—	—	—	24.2	17.5	18.9	19.1	—	—	—	—
1.2 Estates and Government	—	—	—	—	7.1	9.5	9.1	6.9	—	—	—	—
TOTAL	—	—	—	—	31.3	27.0	28.0	26.0	57.7	51.0	46.8	40.5
2. Mining and Quarrying	—	—	—	—	N	N	0.4*	0.5*	N	N	0.3*	0.4*
3. Manufacturing:												
(a) non-monetary	6.5	6.0	6.0	6.1	—	—	—	—	—	—	—	—
(b) monetary	—	—	—	—	11.1	17.0	16.5	17.9	—	—	—	—
TOTAL	—	—	—	—	—	—	—	—	8.9	12.6	13.1	15.0
4. Construction:												
(a) non-monetary	3.3	3.6	3.5	3.8	—	—	—	—	—	—	—	—
(b) monetary	—	—	—	—	4.3	5.6	4.9	4.7	—	—	—	—
TOTAL	—	—	—	—	—	—	—	—	3.8	4.8	4.5	4.4
5. Electricity, Sanitation and Water	—	—	—	—	1.5	1.9	2.1	2.7	0.9	1.1	1.4	2.0
6.1 Public Administration and Defence	—	—	—	—	15.5	12.5	11.5	9.8	8.1	7.5	7.8	7.4
6.2 Education	—	—	—	—	3.5	3.7	3.7	3.4	1.8	2.2	2.5	2.6
6.3 Health	—	—	—	—	1.6	1.2	1.2	1.5	0.8	0.7	0.8	1.1
TOTAL	—	—	—	—	20.5	17.5	16.4	14.7	10.7	10.5	11.1	11.1
7. Distribution, Banking and Finance	—	—	—	—	16.9	16.4	16.9	17.6	8.8	9.8	11.4	13.3
8. Transport and Communications:												
(a) non-monetary	0.6	0.6	0.9	0.8	—	—	—	—	—	—	—	—
(b) monetary	—	—	—	—	7.2	7.9	8.6	10.3	—	—	—	—
TOTAL	—	—	—	—	—	—	—	—	4.1	5.0	6.1	8.0
9. Other services n.e.s.												
(a) non-monetary	3.0	2.9	3.5	3.8	—	—	—	—	—	—	—	—
(b) monetary	—	—	—	—	6.9	6.6	6.2	5.9	—	—	—	—
TOTAL	—	—	—	—	—	—	—	—	5.1	5.2	5.3	5.4
10. GDP at factor cost	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*not including bauxite.

N—Negligible (less than 0.05 per cent)

TABLE IX.4: PROJECTIONS OF SAVINGS AND INVESTMENT
(Kmn.)

		<i>Actual</i>		<i>Projected</i>	
		<i>1965</i>	<i>1970</i>	<i>1975</i>	<i>1980</i>
1.	Domestic Investment . . .	25.1	54.6	71.0	109.0
1.1	Monetary . . .	23.1	51.6	67.0	103.0
1.1.1	Gross Fixed Capital Formation . . .	17.7	46.4	60.0	95.0
1.1.1.1	Public . . .	13.4	25.6	33.0	50.0
1.1.1.2	Private . . .	4.3	20.8	27.0	45.0
1.1.2	Stock Changes . . .	5.4	5.2	7.0	8.0
1.2	Non-Monetary . . .	2.0	3.0	4.0	6.0
1.2.1	Gross Fixed Capital Formation . . .	1.6	2.2	3.0	4.0
1.2.2	Stock Changes . . .	0.4	0.8	1.0	2.0
2.	External Debt Amortization . . .	3.8	13.0	7.9	17.1
2.1	Public . . .	3.1	3.3	5.9	13.1
2.2	Private . . .	0.7	9.7	2.0	4.0
3.	Changes in Foreign Reserves . . .	7.6	6.8	2.0	3.0
4.	Total Investment Requirements . . .	36.5	74.4	80.9	129.1
5.	Domestic Savings . . .	3.6	18.1	40.0	77.0
5.1	Monetary . . .	1.6	15.1	36.0	71.0
5.1.1	Public . . .	-9.9	-11.0	1.1	13.3
5.1.2	Private . . .	11.5	26.1	34.9	57.7
5.2	Non-Monetary . . .	2.0	3.0	4.0	6.0
6.	Net Factor Payments Abroad . . .	-4.3	-4.9	-8.6	-14.9
6.1	Public . . .	-1.3	-1.1	-3.1	-3.3
6.2	Private . . .	-3.0	-3.8	-5.5	-11.6
7.	National Savings . . .	-0.7	13.2	31.4	62.1
7.1	Monetary . . .	-2.7	10.2	27.4	56.1
7.2	Non-Monetary . . .	2.0	3.0	4.0	6.0
8.	Net Foreign Transfers . . .	27.2	13.1	10.9	11.8
8.1	Public . . .	26.3	11.4	8.3	8.3
8.2	Private . . .	0.9	1.7	2.6	3.5
9.	Capital Inflow . . .	9.9	48.1	38.6	55.2
9.1	Public . . .	4.3	34.4	28.0	33.0
9.2	Private . . .	5.6	13.7	10.6	22.2
10.	Total Resources . . .	36.5	74.4	80.9	129.1

TABLE IX.5: BALANCE OF PAYMENTS PROJECTIONS
(Kmn.)

		<i>Actual</i>		<i>Projected</i>	
		<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>
1.	Merchandise:				
1.1	Credit	28.5	47.5	79.0	123.0
1.2	Debit	40.9	68.4	95.0	135.0
1.3	Net Credit	-12.4	-20.9	-16.0	-12.0
2.	Non-Factor Services:				
2.1	Credit	4.1	8.1	13.0	22.0
2.2	Debit	13.1	23.7	28.0	42.0
2.3	Net Credit	-9.0	-15.6	-15.0	-20.0
3.	Factor Income:				
3.1	Credit	5.5	9.8	9.0	8.0
3.2	Debit	9.8	14.7	17.6	22.9
3.3	Net Credit	-4.3	-4.9	-8.6	-14.9
4.	Net Goods and Services	-25.7	-41.4	-39.6	-46.9
5.	Transfers:				
5.1	Private Transfers:				
5.1.1	Credit	2.1	2.1	3.0	4.0
5.1.2	Debit	1.2	0.4	0.4	0.5
5.1.3	Net Credit	0.9	1.7	2.6	3.5
5.2	Government Transfers:				
5.2.1	Credit	26.4	11.6	8.6	8.6
5.2.2	Debit	0.1	0.2	0.3	0.3
5.2.3	Net Credit	26.3	11.4	8.3	8.3
5.3	Net Transfers	27.2	13.1	10.9	11.8
6.	Balance on Current Account	1.5	-28.3	-28.7	-35.1
7.	Long Term Capital:				
7.1	Private				
7.1.1	Credit	2.8	6.2	10.5	21.0
7.1.2	Debit	0.7	9.7††	2.0	4.0
7.1.3	Net Credit	2.1	-3.5	8.5	17.0
7.2	Government (inc. public enterprises)				
7.2.1	Credit	3.1	32.4††	27.0	32.0
7.2.2	Debit	3.1	3.3	5.9	13.1
7.2.3	Net Credit	—	29.1	21.1	18.9
7.3	Net Long Term Capital	2.1	25.6	29.6	35.9
8.	Net Short Term Capital*	2.8	7.5	0.1	1.2
9.	Net Monetary Movements**	1.2	2.1	1.0	1.0
10.	Balance on Capital Account	6.1	35.1	30.7	38.1
11.	Movement in Foreign Exchange Reserves†	-7.6	-6.8	-2.0	-3.0

* including errors and omissions.

** including SDR allocations.

† Minus equals a rise, plus equals a fall in the reserves.

†† The large outflow of private capital arose from the repatriation of working capital, by the Nacala rail link contractors after the receipt of the final payment of K10 mn. from Malawi Railways. A similar sum was received as a Government loan and inflated the figure for Government long-term capital.

Appendix A

Select Bibliography

Economic Planning Division	. . .	<i>Economic Report</i>
		<i>Mid-Year Review</i>
National Statistical Office	. . .	<i>Balance of Payments</i>
		<i>National Accounts Report</i>
		<i>Annual Survey of Economic Activities</i>
		<i>Annual Statement of External Trade</i>
Ministry of Finance	. . .	<i>Public Sector Financial Statistics</i>
Ministry of Agriculture and Natural Resources	. . .	<i>Department of Agricultural Annual Report Part I</i>

These are all annual publications and are obtainable from the Government Printer, Zomba, Malawi.

Glossary of Abbreviations

ADMARC	. Agricultural Development and Marketing Corporation—formerly Farmers' Marketing Board (FMB)
ASEA	. Annual Survey of Economic Activities
BACS	. British Aided Conditions of Service
BOAC	. British Overseas Airways Corporation
BOP	. Balance of Payments
CAP	. Common Agricultural Policy
CIF	. Cost, Insurance and Freight
EEC	. European Economic Community
EPD	. Economic Planning Division
FAO	. Food and Agricultural Organisation
FMB	. Farmers' Marketing Board, now known as ADMARC
FOB	. Free on Board
FOR	. Free on Rail
GCE	. General Certificate of Education
GDP	. Gross Domestic Product
GFCF	. Gross Fixed Capital Formation
GNP	. Gross National Product
IBRD	. International Bank for Reconstruction and Development
ICOR	. Incremental Capital-Output Ratio
IDA	. International Development Association
K	. Kwacha (unit of currency = £0.50)
lb.	. Pounds (weight)
MDC	. Malawi Development Corporation
mn.	. million
NF Services	. Non-Factor Services
NSO	. National Statistical Office
NSSA	. National Sample Survey of Agriculture 1968/69
OSAS	. Overseas Aid Scheme
SDR	. Special Drawing Rights
t	. tambala (100t = K1)
US	. United States



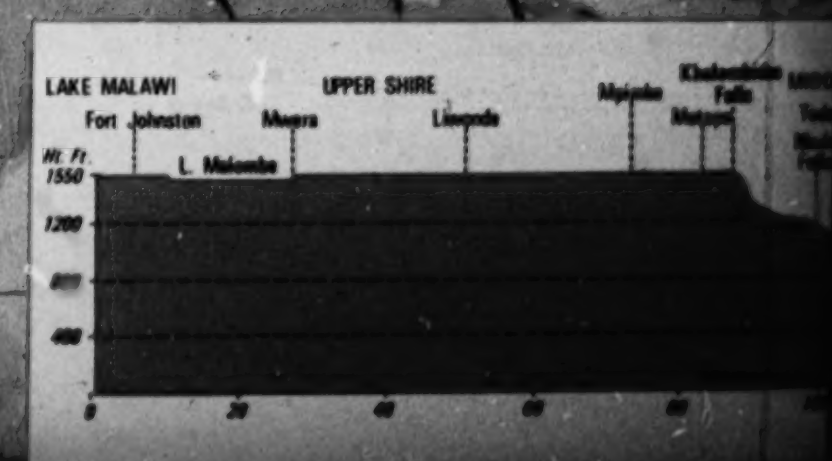
Notes to Map

Certain place-names have been changed since this map was prepared

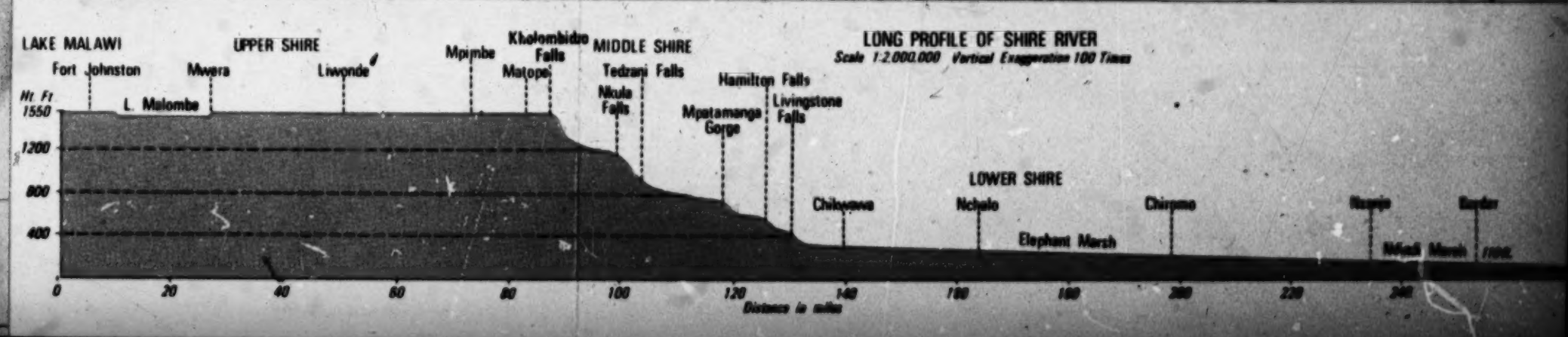
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Rumpi	Rumphi
Fort Johnston	Mangochi
Cholo	Thyolo
Mlanje	Mulanje

Map included by permission of Collins—Longmans Publishing Co.

This is a detailed topographical map of Lake Malawi and its surrounding regions in Tanzania and Mozambique. The map shows the lake's shoreline, major rivers like the Shire and Save, and various geographical features such as the Livingstonia Mountains and the Karonga Plateau. Numerous towns and villages are marked, including Lilongwe, Morondoro, and Zomba. A scale bar and a north arrow are included in the bottom right corner.

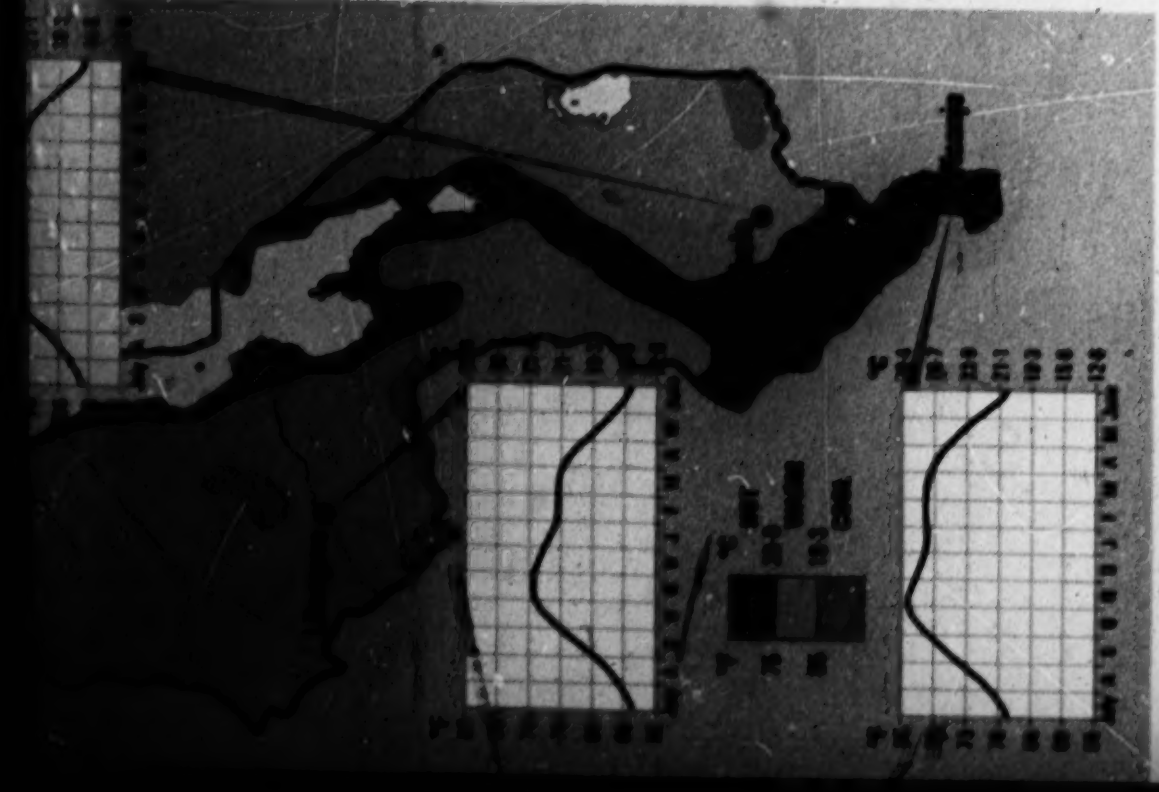
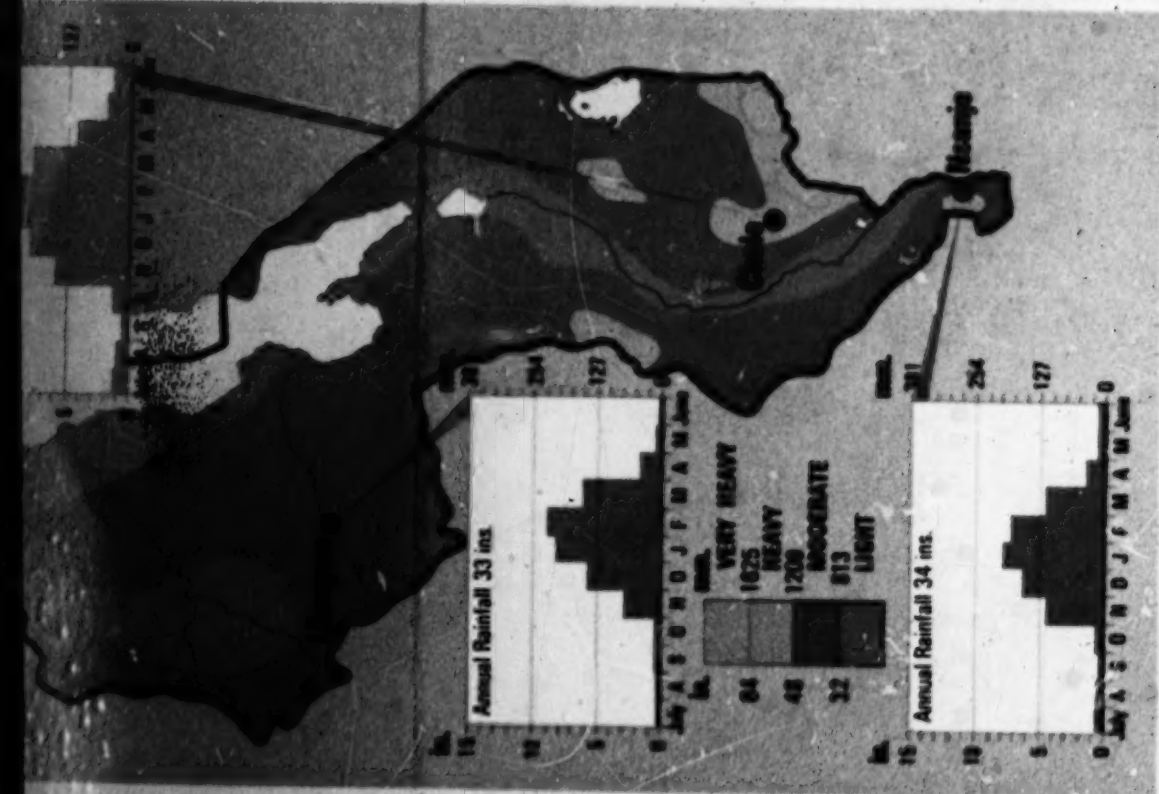


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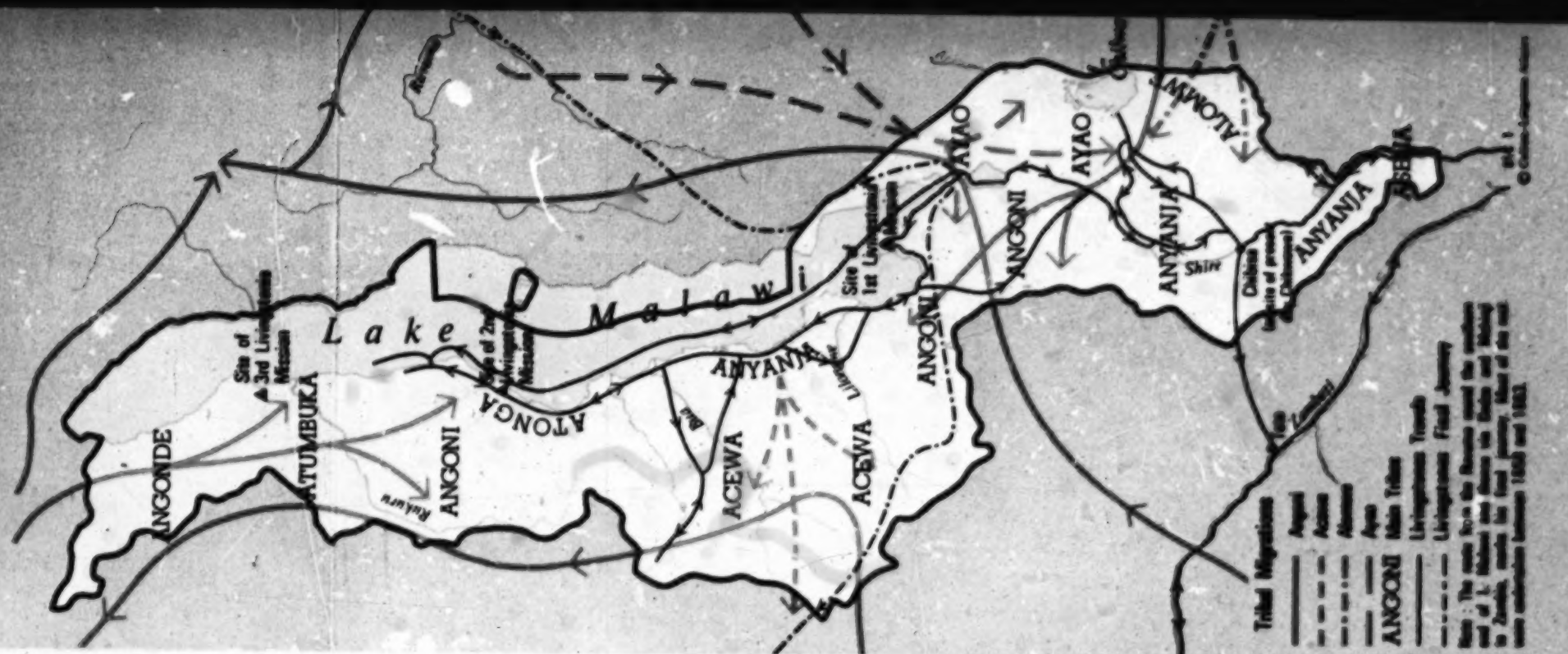


Cattle
Gum
Rubber
Sugar
Tea
Tobacco
Tung

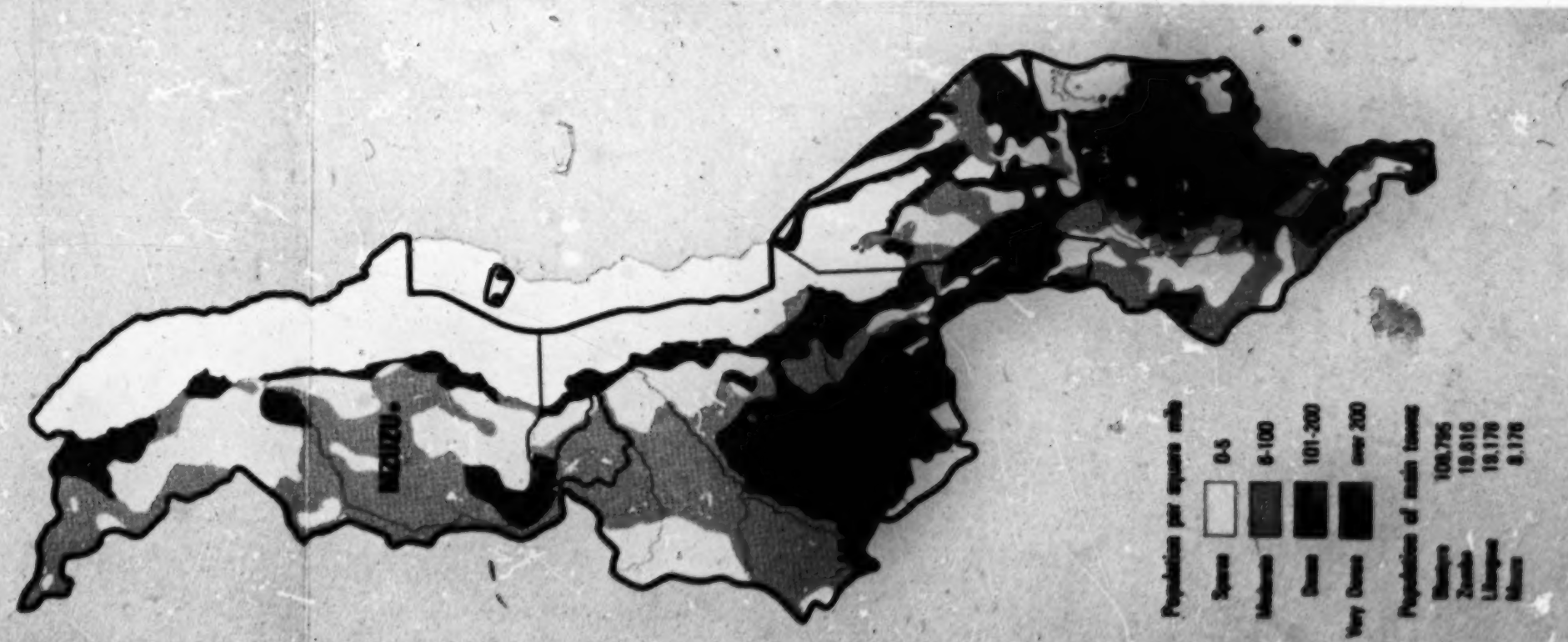
Land under agriculture
Little or no agriculture
Forest reserves
Game reserves
Malaya National Park
Marsh



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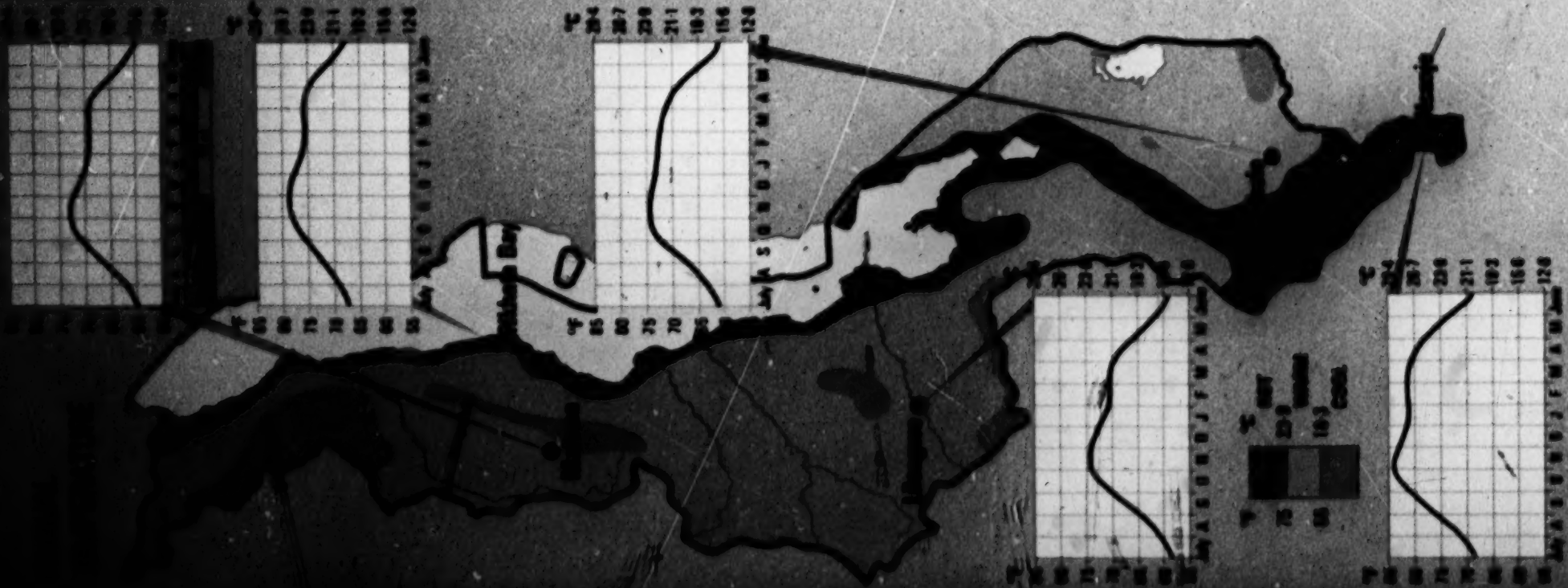


POPULATION DENSITY

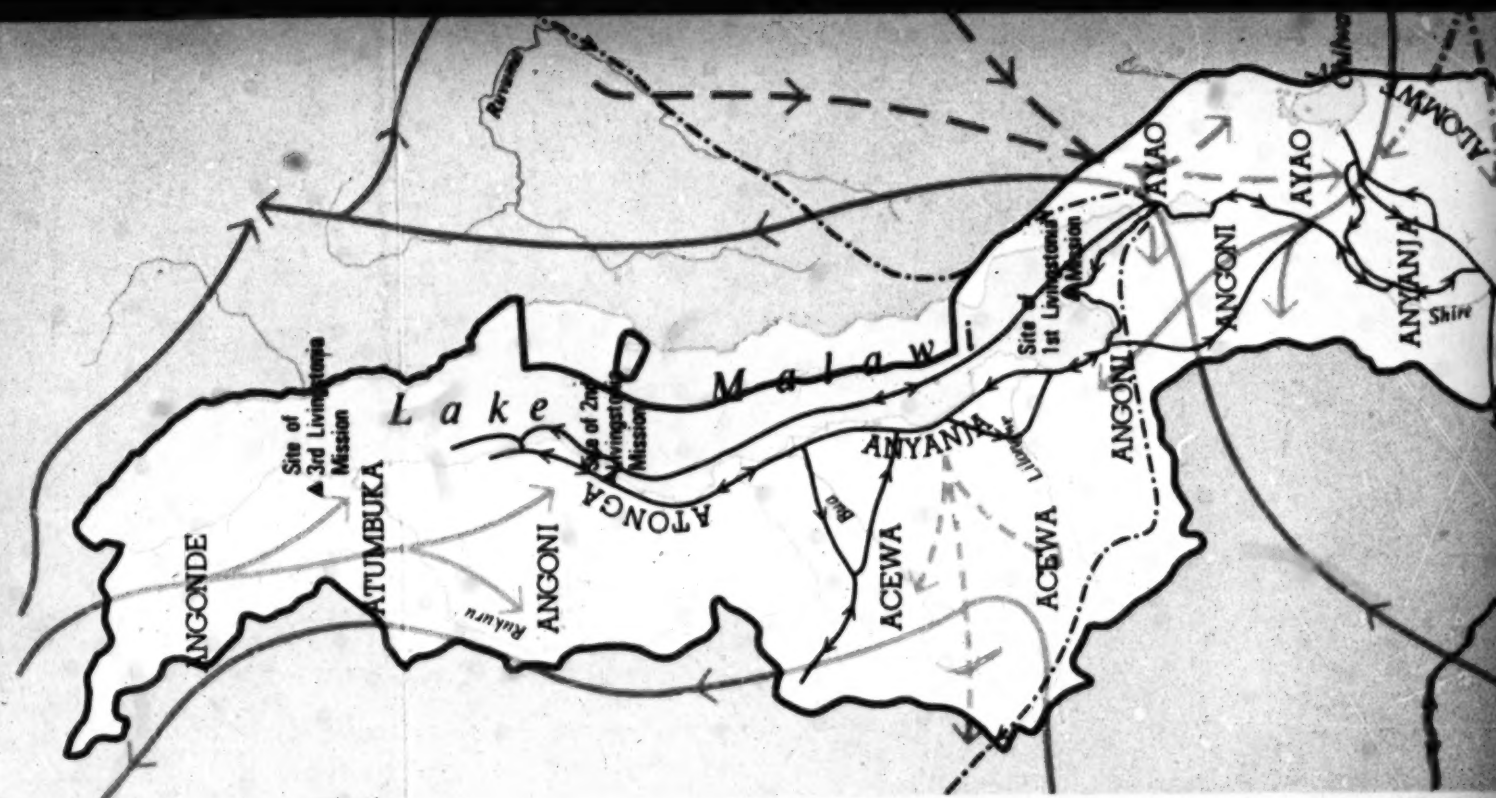


ECONOMIC & INDUSTRY

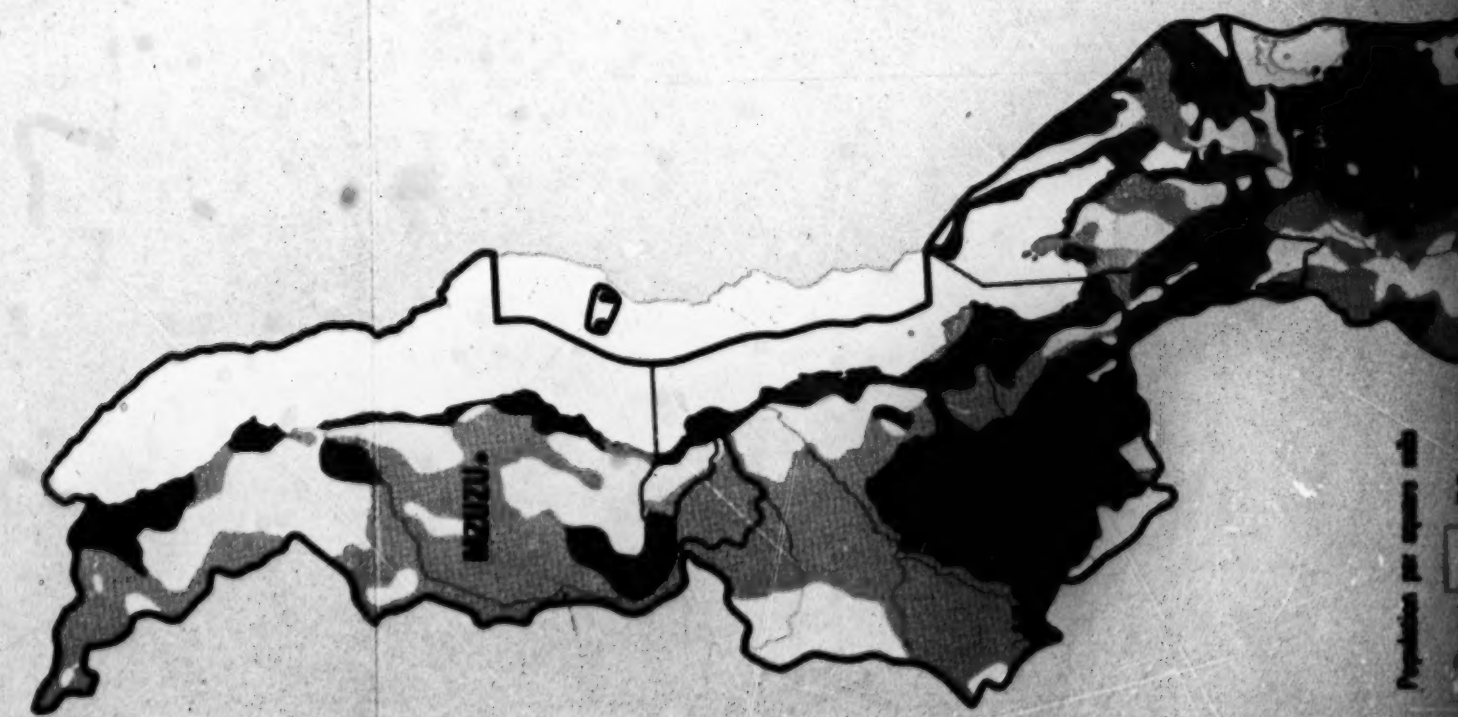




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